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REPORT

OF THE

Saskatchewan Educational Commission

ON

Agricultural and Industrial Education, Consolidation of
Schools, Training and Supply of Teachers, Courses
of Study, Physical and Moral Education,
with Recommendations.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY

REGINA:
J. W. REID, Government Printer
1915

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To His Honour
GEORGE WILLIAM BROWN,
Lieutenant Governor of Saskatchewan.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to submit herewith the Report of the Commission appointed under the Order in Council of May 9, 1912.

Respectfully submitted,

WALTER SCOTT,
President of the Council.

EXECUTIVE COUNCIL CHAMBERS,
REGINA, *November 19, 1913.*

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REGINA, SASK., *December 18, 1913.*

TO THE HONOURABLE WALTER SCOTT,
Premier of Saskatchewan.

SIR,—I have the honour to submit herewith the Report of the Educational Commission on Agricultural and Industrial Education. The Report on the other topics of inquiry is not yet complete. Your commissioners expect to have this ready for submission at an early date.

I have the honour to be, Sir,

Your obedient servant,

D. P. MCCOLL,
Chairman of Commission.

REGINA, SASK., *December 18, 1913*

TO THE HONOURABLE WALTER SCOTT,
Premier of Saskatchewan.

SIR,—Your commissioners appointed under Order in Council the ninth day of May, 1912, beg to submit herewith the following Report on Agricultural and Industrial Education.

We have the honour to be, Sir,

Your obedient servants,

D. P. McCOLL.
W. J. RUTHERFORD.
T. E. PERRETT.
DANIEL McINTYRE.
W. A. McINTYRE.

MINUTE OF THE EXECUTIVE COUNCIL OF SASKATCHEWAN.

Dated at Regina on Thursday, the ninth day of May, 1912, and approved by His Honour the Lieutenant Governor.

The Executive Council has had under consideration a report from the Minister of Education, dated April 15, 1912, stating that in view of the exceptional development in many respects in the Province he has had for some time under consideration the general question of Education and the necessity of making careful inquiries into a number of questions vitally affecting our schools, and also of broadening the existing system in order to make it as serviceable and comprehensive as possible. To do so it is necessary that matters of educational importance here and elsewhere should be carefully investigated with a view to ascertaining how far these may be applicable to our conditions and in what respects changes in our system may be necessary.

The Minister further observes that it would therefore seem in the public interest that Your Honour should appoint Commissioners to inquire into and report upon the matters indicated above with particular reference to their bearing upon such subjects as the following, namely:

1. Agricultural education in public and high schools;
2. Technical education;
3. Consolidation of schools;
4. Training and supply of teachers;
5. Courses of study and text-books for public and high schools;
6. Physical education;
7. Such other matters incident to and connected with or arising out of all or any of the matters hereinbefore mentioned as it may appear desirable to investigate or inquire into.

Upon consideration of the foregoing report, and on the recommendation of the Minister of Education, the Executive Council advises that, under the provisions of Chapter 18 of The Revised Statutes of Saskatchewan intituled "An Act respecting Inquiries concerning Public Matters," the following persons be appointed Commissioners for the purpose of such investigation, and that pursuant to the provisions of the said Act the said Commissioners be given full power to hold sittings and summon witnesses and to require them to give evidence on oath or solemn affirmation and to produce such documents and papers as the Commissioners may deem requisite:

Duncan P. McColl, B.A., Superintendent of Education, Regina;
William John Rutherford, B.S.A., Dean of the College of Agriculture, Saskatoon;
Thomas Edwin Perrett, B.A., Principal of the Normal School, Regina;
William A. McIntyre, B.A., LL.D., Principal of the Normal School, Winnipeg;
Daniel McIntyre, M.A., Superintendent of Schools, Winnipeg.

J. W. McLeod,
Clerk of the Executive Council.

REGINA, SASK., *November 15, 1913.*

THE HONOURABLE WALTER SCOTT,
President of the Council.

SIR,—The Commissioners appointed to investigate educational conditions in the Province and to suggest means whereby these might be improved beg to report as follows:

INTRODUCTION.

For the purpose of conducting the investigation the method of procedure decided upon was:

(*a*) To visit educational centres in the older provinces and the United States with a view to learning at first hand the steps taken to meet conditions and to solve problems similar to those of Saskatchewan;

(*b*) To secure through conferences with the inspectors of schools for the Province and others professionally engaged in school work information from their point of view respecting the educational facilities of the Province and the requirements of the schools;

(*c*) To hold meetings of inquiry at a number of centres in the Province with a view to getting representative evidence from boards of trustees and others interested in education as to the extent to which the several educational agencies were meeting the requirements of the people of the Province and how these agencies might be supplemented or enlarged to serve more fully the needs of the community;

(*d*) To obtain through questions asked, written information from a number of farmers known to be interested in education and particularly agricultural education; and

(*e*) To study authoritative reports of the history and progress of reform in leading educational centres not visited by the Commission.

VISIT TO REPRESENTATIVE INSTITUTIONS.

Following out this plan of procedure, and while the schools were in operation, the Commission, or subcommittees thereof, visited leading educational centres in Manitoba, Alberta, Ontario, Massachusetts, New York, Michigan, Wisconsin, Minnesota, California and Washington. A list of the institutions visited is given in the appendix to the report.

One of the members of the Commission, who was in Europe on behalf of the University, took advantage of his opportunity while there to examine closely into agricultural education in England, Scotland, Holland, France and Germany. Reference to his investigations is made elsewhere in the report.

When in the Eastern States your commissioners attended the State Convention held in Boston in the interests of industrial education. A list of those who took part in the Convention and the topics of their addresses are given in the appendix.

Your commissioners were received kindly at every point visited and are grateful to the following for the helpful information received: Jas. Robertson, Chairman of the Royal Commission on Industrial Training and Technical Education; Prof. S. B. McCready, Director of Elementary

Agricultural Education in the Province of Ontario; Walter H. French, Professor of Agricultural Education, Michigan Agricultural College, Lansing; Dr. David Snedden, Commissioner of Education, Massachusetts State Board of Education; John Seath, Superintendent of Education for Ontario; William Orr, Deputy Commissioner of Education for Massachusetts; R. W. Stimson, Agent for Agricultural Education for the State Board of Education for Massachusetts; Chas. A. Prosser, Secretary of the National Society for the Promotion of Industrial Education; Edwin G. Cooley, Ex-Superintendent of Schools, Chicago.

MEETING WITH SCHOOL INSPECTORS.

Following the visit to typical educational institutions a two days' conference was held with the inspectors of schools for the Province. By reason of their intimate knowledge of local conditions the inspectors were able to make helpful suggestions for increasing the efficiency of the work in the schools. Subsequently, written statements were obtained from them in answer to questions asked, in which valuable information was given regarding the educational conditions and needs of their respective districts.

PUBLIC SESSIONS IN CENTRES IN SASKATCHEWAN.

With a view to getting as representative evidence as possible from persons interested in education public sessions of the Commission were held as follows:

Prince Albert, December 9 and 10, 1912.
Saskatoon, December 11 and 12, 1912.
Moose Jaw, December 13 and 14, 1912.
Regina, December 16, 1912.
Arcola, April 10, 1913.
Weyburn, April 11, 1913.
Wolseley, April 14, 1913.
North Battleford, April 19, 1913.
Yorkton, June 7, 1913.

The members of the Commission are pleased to be able to bear testimony to the wide interest shown in the investigations. Boards of trustees, civic officials, persons interested in industry, in commerce, in agriculture were just as ready to assist by giving evidence and otherwise as those immediately connected with the work of school education.

In all 156 witnesses were examined and the evidence given is submitted herewith as part of the report.

OPINIONS OF REPRESENTATIVE CITIZENS.

In order to obtain reliable information and to secure well-grounded opinions upon matters affecting rural schools, a list of questions was submitted to a number of representative citizens. This list and the answers given are submitted as part of the report.

BIBLIOGRAPHY.

A partial list of the various documents, circulars, etc., consulted by the commissioners in their investigations is given in the appendix.

HISTORICAL.

Prior to the year 1884 there were a few schools scattered throughout the North-West Territories. These were located mainly at Church Missions and received grants from the Federal Government at Ottawa.

In 1884 an Ordinance was passed by the North-West Council making provision for the establishment of school districts and the payment of grants to these districts.

In 1885 there was established a Board of Education for the North-West Territories. This board consisted of five members, three Protestant and two Roman Catholic. The Lieutenant Governor was Chairman of the Board. In 1896 the Department of Education for the North-West Territories was established.

In 1888 the number of members on the Board was increased to eight, five Protestant and three Roman Catholic.

In 1892 the Council of Public Instruction took the place of the Board of Education. The Council consisted of the members of the Executive Council and four additional members, two Protestant and two Roman Catholic. One of the members of the Committee acted as Chairman of the Council and was appointed by the Lieutenant Governor in Council.

In 1901 The School Act came into force. It provided for a Commissioner of Education who was to be a member of the Executive Council. An Educational Council was also established consisting of five members, three Protestant and two Roman Catholic.

On September 1, 1905 the division of the Territories into Provinces took place. No changes were made in the provisions of The School Act.

In 1907 two measures were passed providing for higher education, namely, The Secondary Education Act and The University Act. It is important to note that prior to the passing of The Secondary Education Act secondary education was provided for. It was the duty of the North-West Council "to define by standards the studies to be pursued in all schools, such to be numbered from 1 upwards. Those standards above Standard V were to be denominated 'high school standards.'"

The following extract from the Report of the Council of Public Instruction of the North-West Territories of Canada for 1896 will show the first steps taken by the Board of Education to provide professional instruction for teachers:

> The early efforts of the Board of Education to secure professional training for its teachers are interesting. In its report for 1886–1887 it gives a copy of a resolution forwarded to the Minister of the Interior affirming the need of a central training school for the professional instruction of teachers and asking financial assistance therefor. By resolution adopted March 14, 1889, it was made compulsory on every Union school, if required by the Board of Education, to have a Normal school department with annual sessions beginning on the first Monday in November and ending on the last Friday of the March following. The only work undertaken in accordance with this resolution, of which any official record exists, was done by Mr. A. H. Smith, B.A., principal of the Moosomin Union school, who, in addition to his other work, delivered a series of lectures on the science and art of teaching to a number of students who had obtained second and third class nonprofessional certificates. This voluntary course ended April 8, 1890.
>
> Complaints having been made that too much time was devoted to the training of teachers, the secretary was instructed at a meeting of the Board of Education held September 10, 1890, to point out to the principals of Union schools that the training of teachers is not part of the work of any Union school until a Normal department therein is authorised. At the same meeting the following resolution was adopted: "That a Normal department be established at Regina and Moosomin Union schools, to be conducted in each case by the Inspector of Schools for the district, the first session

to open on the first Monday in November, and that all teachers in each of these districts who hold nonprofessional certificates and desire to teach be invited to attend the session held in their district; that, with regard to the holders of nonprofessional certificates in other inspectoral districts, whenever there are ten such who desire to receive Normal training in any Union school, the Board will endeavour to arrange for a Normal session being held in such school." These sessions were to close on December 24 for Third Class candidates and on the last Friday in March for First and Second Class candidates.

At Regina no candidate accepted this invitation. Six Third Class candidates were trained at Moosomin by Inspector Hewgill. In 1891 no session was held. In the beginning of 1892 Inspectors Rothwell and Hewgill conducted sessions at Regina and Moosomin. In November, 1892, the board offered to conduct sessions in Alberta and Saskatchewan but no students accepted the invitation. During the early part of 1893 sessions were conducted in Regina and Moosomin by Inspectors Rothwell and Hewgill.

By the School Ordinance assented to December 31, 1892, previously existing School Ordinances were amended and consolidated, a Council of Public Instruction constituted and power given to establish Normal schools. Under this Ordinance the present Superintendent of Education, D. J. Goggin, M.A., was appointed Director of Normal schools, April 1, 1893, and in August the Council by regulation declared, "A nonprofessional certificate shall not be valid as a license to teach." This made professional training compulsory on all candidates for teachers' certificates.

SCHOOL STATISTICS.

Number of school districts in Saskatchewan on September 1, 1905	896
Number of school districts in Saskatchewan on November 1, 1913	3,192

Schools in Operation.	1906	1912
Rural	782	2,131
Village, town and city	91	313
Total	873	2,444
Departments in Operation	1,017	2,947
Total Enrolment.		
Rural	19,230	47,578
Village	3,895	11,503
Town	5,300	9,924
City	2,850	10,877
Average Attendance.		
Rural	9,779	31,508
Village	1,789	6,086
Town	2,696	5,195
City	1,517	5,493

Classification of Pupils.

Grade	1906		1912	
	Rural schools	Village, town and city schools	Rural schools	Village, town and city schools
Grade I	5,412	3,350	16,758	10,408
Grade II	3,411	1,828	6,788	4,233
Grade III	3,717	2,056	7,312	4,289
Grade IV	3,515	1,940	6,766	3,894
Grade V	2,086	1,279	4,153	2,787
Grade VI			2,261	2,007
Grade VII	967	905	1,444	1,506
Grade VIII			1,672	2,001
Junior Form H.S. Class	119	454	422	966
Middle Form H.S. Class	3	177	43	202
Senior Form H.S. Class	0	56	4	11
Total	19,230	12,045	47,578	32,304

Number of teachers employed.	
1906	1,298
1912	3,397

PART ONE

AGRICULTURAL AND INDUSTRIAL EDUCATION

AGRICULTURAL AND INDUSTRIAL EDUCATION.

The almost universal movement in the direction of associating direct training for occupation with the general training heretofore given by the schools is the outstanding fact in the educational history of today. The development of this movement is chiefly in two directions, training for agriculture and training for industry.

The argument for each is substantially the same. The progress of science and its application to agriculture make available an important fund of knowledge essential to intelligent farming. The practical operations of the farm, however, do not afford an opportunity for the mastery of this knowledge The vast amount of machinery and the complex organisation of modern industry demand knowledge and skill in highly specialised departments, but industry no longer has the facilities for communicating this knowledge and skill to the young worker. It is claimed that the content of both agricultural and industrial training is of great educational value; that contact with real things gives a rounded development not to be had from books alone; that the introduction of practical subjects into the course of studies gives point and meaning to the academic side of the school; that even a rudimentary knowledge of one of the occupations is a valuable equipment for entry on the work of life; that the schools of a community should contribute to material as well as moral and intellectual development; and that for these reasons agricultural and industrial training should be organised on the same footing as general education and supported in the same way.

A.—AGRICULTURAL EDUCATION.

In considering the question of agricultural education in public and high schools it must be recognised that agriculture is the leading industry in Saskatchewan, and that upon this industry a large percentage of the people are dependent for their livelihood. This being the case a duty plainly devolves upon the schools to provide means by which pupils wishing to do so may further their knowledge of a subject of so great importance.

Apart from its value in developing the thinking and reasoning powers of the pupil, agriculture has in view of special conditions in Saskatchewan an economic value which cannot be overlooked. What has been accomplished during the present year may well serve to illustrate the truth of this statement. If some farmers through employing well-directed methods can place the Province in the foremost rank as a stock-raising and grain-producing country, it is difficult to estimate how far-reaching would be the effects if scientific methods were more generally known and employed.

The social movement which of late years has been a cause of so many people leaving the rural districts for the towns and cities has directed widespread attention to the urgent necessity of something being done through a modification of school systems to make rural activities more attractive. Many recommendations were made and much evidence submitted as to the place agriculture should occupy in a school system and the best means of promoting agricultural education. The opinion was general that the schools have an important function to perform in this respect: the public schools through nature study and school gardening; the high schools through a more advanced study of the principles underlying agriculture.

In view of the interest attaching to agricultural education, it is thought advisable at the outset to indicate briefly what the various educational agencies of Saskatchewan are doing in the way of preparatory work in this important field.

(*a*) ELEMENTARY SCHOOLS.

The following is the programme in nature study, school gardening and agriculture outlined in the course of studies as a guide for teachers in the elementary schools:

Grade I.

Observation of animals and plants familiar to the pupils. Teacher assigns points of observation on domestic animals and garden plants and pupils report.

Observation of such land and water forms as are found in the neighbourhood: hill, valley, slope; stream, river, pond, slough.

Forms of water: dew, fog, rain, hail, snow; obvious qualities and uses of each.

Simple observations on the weather and on the seasons.

Preliminary notions of direction and time.

Simple experiments to show the leading characteristics of common things.

Caring for plants at home and at school. Simple operations in growing plants and vegetables. Collecting things of natural beauty.

Field excursions for purposes of observation.

Grade II.

Continuation of work of Grade I. Extend to include undomesticated animals, wild flowers and conspicuous insects. Object lessons in connection therewith.

Preparing window boxes and growing flowers.

Gardening operations.

Collecting things of natural beauty to form the nucleus of a school museum.

Study of land and water forms in the neighbourhood to be continued.

Weather observations to be continued; winds and storms, their effect on land and sea; on animals and plants.

Cardinal and semi-cardinal points of the compass; their local application.

Grade III.

Continuation of work of former grades with animals and plants.

Particular attention to insects, trees and bushes.

Lessons on plants and garden trees. Planting seeds at home and at school. Growing vegetables and flowers. Keeping simple garden records.

Making collections of leaves, wood specimens, rocks.

Recognition of common flowers, weeds, plants and trees.

Grade IV.

Special attention to birds and grasses.

Lessons on soil and seed. Seed germination under varying conditions. Experiments with water. Individual and class plots. Keeping records. Growing from plants; from cuttings.

Starting an aquarium.

Collections of minerals and seeds.

Field trips in search of material.

Grade V.

Study of the beneficial insects, animals and common cereals.

Lessons on plant food, on air, and water in soils.

Effect of varying light, air, heat and water on various parts of the plant. Experiments with heat. Growing biennials.

Development of toad or frog from the egg.

Making collection of plants.

Field trips for collections.

Grade VI.

Noxious insects and animals; plant life of special areas.

Lessons on plant structure, plant food and reproduction of plants; experiments with food of plants.

Study of tools and simple machines for their mechanical principles.

Experiments with air.

Development of the mosquito or locust.

Making collection of insects.

Field trips as required.

Grade VII.

Pupils should become acquainted through observation with the main points connected with the following topics. Experiments should be made where suitable. Drawing should also be encouraged.

Animals: resemblances and differences between the horse, the cow, sheep and pig; food and care of each.

Plants: resemblances and differences between plants and animals; also between wheat, oats, barley, rye, beet, turnip, cabbage, potato. The work of the leaf, stem, root, seed and flower in connection with some of these.

Soil: the formation, composition and condition of soil; the requirements for seed germination and plant growth.

Farm mechanics: study of tools and simple machines continued.

Grade VIII.

Pupils should become acquainted through observation with the main points connected with the following topics. Experiments should be made where suitable. Drawing should also be encouraged.

Animals: resemblances and differences between the horse, cow, sheep and pig; food and care of each.

Plants: resemblances and differences between plants and animals; also between wheat, oats, barley, rye, beet, turnip, cabbage, potato. The work of the leaf, stem, root, seed and flower in connection with some of these.

Soil: the formation, composition and condition of soil; the requirements for seed germination and plant growth.

Farm mechanics; study of tools and simple machines continued.

The work herein prescribed is very similar to that of other Provinces and States and is in accord with the opinions of those who have had experience in teaching these departments.

The work in Grades VII and VIII, the two highest grades of the public schools, is designed to pave the way for the formal study of elementary agriculture. The subject is an obligatory examination subject for a Grade VIII diploma which is in effect the public school leaving diploma for the Province. Evidence would go to show that while in some respects good work is done many teachers are teaching the subject not through any love for it but because they feel they have to. The results of the teaching of agriculture in the elementary schools of Saskatchewan are very similar to those of other Provinces and States and, generally speaking, cannot be regarded as entirely satisfactory.

But while this may be the case in regard to agriculture information received from inspectors of schools and others proves conclusively that a number of teachers in the Province are doing especially creditable work in developing an interest in nature study through school gardening, field excursions, collection of grasses, plants and insects and the growing of plants in the schoolroom. In these cases it is found that the influence on the community is very apparent. The attitude of the teacher, however, is invariably regarded as a necessary factor in keeping alive an active interest in these subjects both in the school and in the community.

The reports of the inspectors are instructive, showing as they do that the leaders in educational work in the Province have already recognised the place and value of this preparatory work. Every inspector reports some creditable effort in his district and this invariably in schools that stand well in the established subjects of the course of study. The fact that the work is encouraged by boards of trustees and their officers and stimulated by exhibitions and by prizes donated by citizens indicates the interest of the general public, while the success that has been achieved where the experiment has been made shows that the work may be successfully carried on in every school in the Province.

The report of Mr. A. Kennedy is typical, and as it occupies but little space it is given here in full.

"In response to your request for information *re* school garden work in the Weyburn inspectorate, I beg to submit the following:

"Credit for pioneer work in school gardening in the Weyburn inspectorate is due to Mr. J. A. Chisholm, Principal, Midale School District No. 908 (two-room), and the pupils of this district. In 1909 the first school garden exhibition was held and its success not only in respect to the children's exhibits but also to the interest manifested by the parents and ratepayers resulted in increased activity in 1910. Exhibitions held in 1910, 1911 and 1912 marked advancing steps in the work. During this time attention was given not only to the care and cultivation of individual plots in which vegetables and flowers were cultivated, and to the care of plants in the classrooms but also to correlating the work with the regular work of the classroom. School garden work became an integral element of education.

"During 1913, under the principalship of Mr. C. A. Lapp, the work was enlarged to include grain growing. The boys of the senior grades had charge of plots in which were cultivated oats, three varieties of barley, three varieties of wheat and flax. The result of their work may be partially judged by their success in open competition at the Agricultural Society Fair held in Macoun: in oats they secured first and second; in barley, second and third; in Kubunka wheat, first; Marquis wheat, third.

"Early in 1913 the executive of the teachers' association of the Weyburn inspectorate made preparations for a teachers' convention and school garden exhibit to be held in Midale, September 18 and 19, 1913. Believing that school garden work is fundamental in education and should be financed in the same manner as other school work, the boards of several districts were approached and the boards of Midale, Halbrite, Estevan and Weyburn contributed $225 to provide suitable prizes for the exhibition.

"The exhibition proved a marked success. One classroom, the corridor and a room in the basement were required for a display of the vegetables, flowers and classroom work. Midale deserves special mention for the exhibit of vegetables, flowers and grains.

"Estevan contributed a very creditable exhibit of flowers, grains and classroom work. Weyburn's exhibit was limited to classroom work. Halbrite children showed classroom plants which carried off an award for each exhibit, while Floata school exhibited drawings in pencil which took a prominent place in this class of the exhibition.

"Mr. A. C. Crane, Principal of the Normal School, Minot, N.D., and Mr. A. J. McCulloch of the Normal School, Regina, acted as chief judges; Mr. Turner, Estevan, chairman, judged the vegetables, while Mr. Deacon, Midale, chairman, judged the grains.

"The convention and exhibition will be held in Weyburn in 1914.

"Creditable garden work has been done in several districts, including Wheat Centre School District No. 629, Little Butte School District No. 1580, Wheaton School District No. 1614, Mizpah School District No. 798. Gardens have been undertaken in a number of districts, but the lack of fence protection, the destructiveness of gophers and even the wilfulnessof nonsympathisers have proved very discouraging. However, the movement is spreading surely if slowly.

"A. KENNEDY,
"Weyburn."

The teaching of scientific agriculture in the elementary school is scarcely possible, but it is possible to give nature study a practical bent. The following expressions indicate what in the opinion of experts may safely be attempted:

> Agriculture even in the grades is something more than ordinary nature study. It is nature study plus utility. It is nature study with an economic significance. It is nature study which articulates with the affairs of real men in real life. It is nature study in which the child may influence the processes. It is nature study which distinctly stimulates industry.
>
> When a pupil is sent to study the tree, the bird or the insect, the most that he can do is to observe and record. This is all good in its way, but the tree, the bird and the insect are self-sufficient unto themselves, or, at any rate, are in no sense dependent upon the boy, nor are they of such consequence to him or his except in an æsthetic sense.
>
> When, however, the boy is set to studying the pig, the matter of utility at once enters in as a factor of the problem. The pig is worth something and the boy can see it. He can see how the bare existence of the pig is dependant upon regular feeding which he himself may give; and how the pig when he is brought to a finish is capable of contributing not only to the support of the body, but can be sold for money with which the boy can possess himself of anything dear to his heart. He sees, in other words, how he himself may influence the production of pigs, and if he has even a fair share of that creative activity which most boys possess, it will be stimulated into action by the prospect.
>
> If he is set to studying the cow and her milk, especially if he learns to compare one kind of milk with another, or if his attention is even directed to the conditions under which different kinds may be produced, he sees in concrete ways how Nature behaves in her workshop, what it is that Nature is doing, day by day, and how it is that these activities are connected with the affairs of men. He cannot help seeing how the family that owns good cows has an advantage in the world over those whose cows are poor or ill fed.
>
> So we might review the whole gamut of topics agricultural, and show how their study stimulates and satisfies something more than curiosity or even observation and record. How they reach out and take hold of the very life of the boy, and how they connect the affairs of the school and the schoolroom with those of the home, the neighbourhood and the world into which the child is already anxious to plunge and make himself known and felt.—*Dean Davenport*, in "Education for Efficiency."

> The grammar grades should most emphatically not attempt to give training in general farming methods or in agricultural theory. Children are interested in concrete vital phenomena, not in laws, and nature study should be used to excite the intelligent interest of the pupils in the life about them. But the manual training for these elementary grades might have a local and practical bearing. In place of the purely formal exercises so common in schoolrooms, the class might draw subject matter from practical problems of the farm, and build fences, drains and roadways instead of constructing useless paper, wood or metal objects. The school garden is an infinite resource; and could be made practical by selecting for successive years the different crops suitable to the locality.
>
> In addition to freshening the grammar grades in country schools with a breath of the woods and hills, and with the scent of good red earth; in addition to turning the child's mind towards the beauty and wonder of the natural world, we must also give him special training for his life work. This will begin in the high school. *Miss Ruth Weeks*, in "The People's School."

(*b*) HIGH SCHOOLS.

The only recognition which agriculture has had as a subject of instruction in high schools is the short Special Course provision for which is made in the regulations. This course was designed to meet the needs of those pupils who had not passed the qualifying examination for admission to high schools, but who might wish to improve their standing by taking agriculture along with other subjects regarded as essential for general culture.

This special course was planned on an entirely different basis from the course for the elementary schools. The practical side was kept prominently in the foreground. The outline includes the following:

Soil and Its Treatment.—Nature and origin of soil, classes and properties; moisture and aeration, tillage; improvement and enrichment.

Plant Life and Products.—Plant structure and functions of parts; food and growth; propagation by seed and otherwise.

Farm and Garden Crops.—Kinds and treatment; operations on farm and in garden; weeds and their destruction; diseases of plants and means for prevention.

Animal Life and Products.—Compare animals and plant life; animal physiology and hygiene; stock—kinds, characteristics, food, care, management; dairying—milk, butter, cheese; noxious insects and animals—habits and extermination.

Farm Management.—Records—crop, feed inventories; commerce—buying and selling, bills, notes, banking accounts.

Construction and Mechanics.—Practical plans and solid geometry; mechanical drawing; sketching machine lever, pulley, etc.; implements—tools, machinery; materials—wood, metals, paint, cement, leather, etc.; building fences, barns, sheds, house, roads, etc.; mechanics' arts—work in wood, etc.

Experimental Work.—Germination of seeds; plant growth under varied conditions of heat, moisture, etc.; effect of heat on solids, liquids and gases; capillarity; diffusion; osmosis; presence and properties of some of the following: oxygen, nitrogen, hydrogen, carbon, phosphorus, sulphur, potassium, sodium, carbon dioxide.

In only one high school, however, was any attempt made to take advantage of this provision. It seems to your commissioners that one reason why the course is not more widely accepted is the fact that neither the Department of Education nor the University, through its system of examination, gives it the same recognition as other courses. The professions will not accept a knowledge of agriculture as an equivalent to attainment in other branches of study. As the work is relatively new, the teachers are not always in sympathy with its aims, and parents are not fully alive to its advantages. Your commissioners, however, believe that under proper encouragement the course will amply demonstrate its usefulness.

Nearly all the high schools in Saskatchewan are surrounded by agricultural communities, and by reason of the opportunities for observation and practice work are in a very favourable position for giving instruction in agriculture. From information received from high school principals a large percentage of the pupils enrolled are from the country, and the tendency of this percentage will be to materially increase.

HIGH SCHOOL LIMITATIONS.

As, however, many boys between fourteen and eighteen years of age live in districts remote from high schools, they are not in a position to avail themselves of a course of instruction in agriculture even if such were provided. What is to be done to meet cases of this kind? The small rural school can do but little for them. The College of Agriculture will for a time provide for these, but it cannot long continue to accommodate all who apply. Even at the present time it is learned that the accommodation is taxed to the utmost. Some provision, therefore, should be made by which young people remote from urban centres would have the same educational opportunities as those living in or near these centres. This would involve the establishment in a municipality, or some other unit of area to be defined, a rural high school. To this end a slight amendment to Section 8 of The Secondary Education Act would provide the necessary machinery. Were high schools of this class established and provided with competent instructors, the number of boys leaving the farm for the town would undoubtedly be lessened and life in the country would mean more than it now does. The "township-unit" system referred to in dealing with Agricultural Education in Michigan embodies practically the same idea. This state occupies a foremost position in the attention it is giving to the matter of agricultural education in rural and high schools.

Amongst school men there is a decided difference of opinion as to the place agriculture should occupy in high schools. Some teachers of the natural sciences claim that the adapting of courses in physics and chemistry to suit the requirements of agricultural instruction is accompanied by many difficulties. This opinion is, however, by no means general. If agriculture is given a place on the high school course on a par with other subjects, the teachers of the natural sciences may be relied upon to adapt their methods of instruction to meet requirements.

Your commissioners believe that as the high schools of Saskatchewan enrol each year large numbers of students from country districts, and as the equipment and laboratories may, without undue difficulty, be adapted for instruction in agriculture, the subject should have a more prominent place on the high school programme and agriculture be made an elective subject for all grades of teachers' diplomas.

In support of this opinion it may be said that in some of the provinces and in many of the States of the Union, agriculture occupies a prominent place on the high school course, and from present indications will receive increased attention. The conditions in Saskatchewan are not essentially different from those elsewhere, and if courses were offered in agriculture in the high schools of Saskatchewan the results would undoubtedly be equally successful.

To show how the movement is growing in the United States, it may be stated that prior to the year 1906 there were only a few high schools giving instruction in agriculture; in 1911 there were approximately 1,500. Secondary agricultural education has developed there in two ways; by making use of existing high schools, and by the organisation of separate agricultural high schools. The former type seems to be meeting with the greater success. The natural tendency is to maintain as far as possible the unity of existing educational institutions. The many advantages resulting therefrom have had their effect upon the public.

In many respects, however, these two types are similar. The main point of difference is that in the latter agricultural and household arts are substituted for the foreign languages. In addition, more emphasis is laid on the practical side of the sciences and less on certain phases of mathematics.

Minnesota has recognised the importance of agriculture as a means of high school education, and gives annually $2,500 to each of ten high schools giving instruction in this branch and in mechanic and domestic art. The introduction of agriculture into the high schools there has passed the experimental stage and results have been especially successful.

The following statement shows how the difficulty in getting practice work has been met in the case of an Agricultural High School in Baltimore County, Maryland:

> The school is meant especially to meet the needs of a rural community. It presents all the usual subjects taught in high schools, except foreign languages, and in addition teaches agriculture, domestic science and manual training. It is thus planned that students graduating from this school will, in addition to a good general or academic education, have some industrial or vocational training to fit them to take their places in the world.
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> The principal, who is a specialist in agriculture, devotes the entire year to the school, spending the usual summer vacation in the interests of the school, inspecting and directing the work of pupils who are carrying out in a practical way experiments and problems outlined during the school year. In this manner the principles of agriculture taught in the school are carried over into practice under normal farming conditions. The school in addition to offering excellent instruction in agriculture further serves the community by giving courses for rural school teachers and for farmers and their wives, and by furnishing a centre for religious service and literary and social activities for the young people.

(c) NORMAL SCHOOLS.

The Normal School should be closely associated with elementary agricultural education. It should keep in view the great demand for teachers capable of giving instruction in nature study and school gardening, and the work in these subjects that may profitably be undertaken in elementary schools under average school conditions.

There are now in the Province two Normal Schools working as nearly as possible along parallel lines. Both are giving as much attention to nature study and school gardening as can be given with their limited facilities and the shortness of the sessions. The principals of both institutions are alive to the importance of these subjects and are earnestly striving to give the teachers in training a proper point of view and a thorough acquaintance with the best methods of instruction.

In the Normal School at Saskatoon the teachers in training are reaping the benefit of lectures from members of the University staff. A number of lectures are given weekly by the professors of natural history, of field husbandry, of animal husbandry and of agricultural engineering. Excellent as this work is it must be recognised that each Normal School established in the Province should have within itself facilities for instruction sufficient to meet the needs of those teachers who are to take charge of rural schools. For the training of teachers in agriculture for high schools and collegiate institutes a duty devolves upon the University through the college of agriculture to see that opportunity is provided for this being properly done.

In the Normal School, Regina, every effort is being made by the teachers in charge to interest the students in nature study through the observation and study of birds, plants, flowers, insects, weeds, etc. Special stress is laid upon the planting of bulbs and the germination of seeds to test the various grains. Field excursions are taken at convenient opportunities. Not the least important part of the work is the study of typical poems and books dealing with various aspects of the nature study movement. Nothing of importance has been done in agriculture except in so far as it is related to school gardening and seed planting. The normal

School at Regina is labouring under the disadvantage of not being provided with sufficient school grounds for such practical work as is absolutely necessary in order to produce the best results either in nature study or elementary agriculture. This condition will be remedied with the completion of the new Normal School building.

It will take time, however, to work out a systematic scheme for the training of teachers in agriculture for our various educational institutions. Meanwhile steps should be at once taken to make provision at the College of Agriculture for a short summer course for teachers, even if it be only two weeks in duration. An opportunity should also be afforded to the inspectors of schools to attend for at least two weeks during the summer holidays. Upon inspectors more than upon any other agency must the Department rely for suggestions as to the conditions prevailing throughout the Province and the best means of overcoming the difficulties which invariably are encountered.

The two following paragraphs taken from the Report of the "Committee on Industrial Education in Schools for Rural Communities," are interesting, relating as they do to actual conditions:

> That the supply of properly trained teachers for carrying on this work is totally inadequate to meet even the present demand, and the increase in the demand for such trained teachers in the near future requires a very large increase in the facilities for their preparation, and to supply these facilities, special training schools should be established throughout the country for the preparation of elementary rural school teachers; that the Normal schools whose graduates find positions in rural schools would broaden and strengthen in every way their courses of instruction along industrial lines adapted to the needs of rural schools; that the agricultural colleges favourably situated for such work should undertake to organise special courses for the purpose of training teachers for the secondary schools capable of giving instruction in agriculture and related subjects.
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> That in the growth of public sentiment, in the development of ideals, in the preparation of courses of study, and in the facilities for the training of teachers for industrial work in rural schools, decided progress has been made in recent years; but that much yet remains to be done before the importance and value of this kind of industrial education shall be fully appreciated by all concerned, and before it shall receive its appropriate recognition and find its place in our educational system.

The practice of other communities that have made some progress in the introduction of some measure of agricultural education shows the growing attention given to the preparation of teachers. For example, in the United States in 1910, 87 out of 137 Normal Schools were giving instruction in elementary agriculture. Of those not giving direct instruction in this subject a number taught it incidentally in connection with botany, nature study or some other course in science. The demand for well qualified instructors, however, is still much in excess of the supply.

(*d*) THE COLLEGE OF AGRICULTURE AND THE DEPARTMENT OF AGRICULTURE.

By arrangement between the Minister of Agriculture and the University at the time the University was established, the understanding arrived at was that the College of Agriculture should assume full responsibility for what might be termed "educational work," and the Department for the "administrative" work in the field of agriculture. This policy still continues, and although from the intimate relationship that necessarily exists between these two agencies a certain amount of overlapping must arise, the arrangement has been working out satisfactorily.

The college aims to do three lines of work. It carries on research with a view to increasing the sum total of agricultural knowledge; it offers courses to young men and adults who assemble from time to time at the college; and it disseminates useful information by various means—speakers, demonstrators, bulletins and press articles—and by these means endeavours not only to inform but to stimulate the rural people to live fuller, richer lives under the conditions in which they must of necessity carry on their chief activities.

Two main courses are offered at the college. The one is intended to provide a liberal education for the young men of the farms who for various reasons have been deprived of such during their earlier years. No educational requirements are demanded for admission except a sufficient command of English to enable the student to profit by the teaching. He must be sixteen years of age, of good moral character, physically strong, and must have spent at least one year at actual farm work. The term opens about the first of November and closes the end of March so as to allow the young men full time for seeding, harvesting and threshing. One, two or three years may be spent by such students pursuing studies in English, public speaking, arithmetic and accounts, elementary science—biology, physics and chemistry—animal husbandry, field husbandry, veterinary science, dairying, poultry craft, horticulture and tree planting, drawing, carpentry, blacksmithing, farm machinery and motors, farm buildings and concrete work. A certificate is given the student to show the amount of work he has covered while attending the college.

The other is known as the degree course and is planned for the purpose of preparing men for teaching, research and administrative work along agricultural lines. Men entering this course are required to have matriculation standing or an equivalent to the second class teacher's diploma. The course opens and closes at the same time as that of Arts and Science, and extends over four years. The student may specialise after his second year and obtain his degree in animal husbandry, field husbandry, agricultural engineering, dairying or horticulture.

Students in arts and science are permitted to elect studies in animal husbandry, field husbandry, agricultural engineering and veterinary science. A course is being outlined to admit of students taking a combined course of arts and science and agriculture leading to the degrees of B.A. and B.S.A., in six years with a view to preparing them for colleges and other schools where agriculture may be taught.

A candidate for the B.S.A. degree must have spent at least one year at actual farm work before entering college and during his course must spend each vacation at farm work or at such work as is approved by the faculty of agriculture.

The College of Agriculture has charge of all phases of agricultural society work, such as fairs, appointment of judges at fairs, farming contests, etc. Through the extension work of the college, information is carried to the people who are engaged in actual farming operations. This work is carried on through the medium of agricultural societies, grain growers' associations and the homemakers' clubs. The nature of the work undertaken by these clubs is as follows:

The Homemakers' Clubs of Saskatchewan were organised by the Extension Department of the College of Agriculture of the University of Saskatchewan and are still under its direction. Since the organisation of a few clubs in the fall of 1910, there have been organised up to the present time sixty clubs with about twenty more places considering organisation.

The objects that the College of Agriculture had in view in forming these clubs were:

(*a*) To promote improvement in standards of living in the Province;
(*b*) To bring the women in the more isolated places into touch with one another, to add to their social enjoyment and to benefit one onother by exchange of ideas.

The work as since developed by themselves and with some help from the University may be outlined as follows:

(*a*) Study and care of infants—how to prevent sickness and disease and how to care for such conditions; proper food, clothing etc.;
(*b*) Study of the nature of foods and their nutritive principles; care and cookery of foods; feeding of people at all ages; particularly the very young, also school children and old people; dainty serving of food.
(*c*) Sanitary conditions of the house and of the community, including everything that bears on the prevention of disease.
(*d*) Home nursing and hygiene.
(*e*) Dressmaking—suitable, hygienic and artistic clothing.
(*f*) Home furnishing and decoration.
(*g*) Household management—economy of time and labour, keeping accounts, etc.
(*i*) Poultry—dairying and other farm pursuits.
(*j*) Interest in the establishment of libraries or reading circles and in encouraging reading in the homes.
(*k*) Interest in the education of the young.

The women realise that to do anything of permanent value they must begin with the child. They must do their share towards properly nourishing and caring for his physical welfare and surrounding him in the home with what is likely to develop the best in him, and they must co-operate with the schools in their attempts to further the child's welfare. In this connection they are working for healthful and beautiful surroundings in school room and school ground; for school gardens, which in some cases they have already undertaken to care for during holidays; for instruction in physiology and hygiene, hand work and study of foods and principles of cookery.

This latter is of special import in that its most successful working out in the schools will depend largely on the co-operation of the home. The fact that school and home are working together will be a great advantage to the work itself.

In many cases, the women have undertaken to raise money for objects of necessity in their community, such as supporting hospitals, establishing rest rooms, etc.

The college sends as often as required its representatives to assist rural school teachers on agricultural "field days" where seeds, roots, bread and fruit are exhibited. Short courses are held at the college and at convenient places in the Province for both men and women who are unable to spend the time to take the longer course at the college.

The College of Agriculture has in contemplation a system of demonstration farms throughout the Province. The plan has not yet matured but if it does it should be a valuable instrument in furthering the cause of agricultural education in the Province.

The Department of Agriculture maintains travelling inspectors in the field for the operation of co-operative creameries and others for work in regard to weed eradication. With the aid of part of the Dominion Government grant for agricultural instruction it is proposed in the near future to establish district offices in charge of representatives of the Department. While these men will facilitate locally the work of all branches of this Department, they will also represent the College of Agriculture, and will be engaged in personal educational work amongst the farmers through the medium of the local agricultural societies. So far as the agricultural societies are concerned the division of work between the College and the Department is as follows: The Department of Agriculture organises new societies and pays all legislative grants, while the College, through the director of agricultural extension, superintends the work of the societies and recommends the payment to them of such legislative grants as they may have earned.

Apart from this the Department has no connection whatever with farmers' institutes, agricultural societies and fairs, except in so far as the Provincial Winter Fair is concerned.

The University, through the Extension Department of the College of Agriculture, is providing each Homemakers' Club with the nucleus of a permanent library of technical books and bulletins bearing upon the problems of the home and the community, and with a travelling library of standard fiction and current literature that will go from club to club and eventually from district to district. The plan is a co-operative one in which the clubs will share in bearing a part of the expense of purchasing the travelling library.

(e) THE CARROT RIVER SCHOOL GARDEN ASSOCIATION—ITS ORGANISATION, WORK AND PLANS FOR 1914.

Report Submitted by A. P. Brown, President of the Association.

"School gardening in the Carrot River Valley was begun in 1907 by a group of teachers in the vicinity of Star City. Mr. A. D. M. Hone was the leader of the movement and a partial report of their work is to be found in the report of the proceedings of the 1910 convention of the Saskatchewan Educational Association, at which convention Mr. Hone made an address with regard to their work.

"By means of circulars and newspaper articles, the interest of teachers and the general public was aroused; and in order to sustain this interest it was planned to hold annual exhibitions of the products of the school gardens and of correlated school work. The first of these exhibitions was held at Star City in 1909, in connection with the Teachers' Convention. A second and more successful exhibition was held in Melfort in 1910.

"Owing to the fact that the Carrot River Teachers' Association did not meet in 1911, the movement lost a great deal of its earlier activity. At this time also, Mr. Hone retired from the teaching profession, as did also a number of others intimately connected with the school garden work. The result was that there were few gardens in 1911 and the exhibition held in Birch Hills in 1912, while very creditable, was not up to the former standards.

"At this convention, however, an important change was made in the management of the work. Hitherto, the movement had been directly under the officers of the Teachers' Association. After a lengthy debate, in which all the teachers present manifested an intense interest in the subject of school gardening, it was decided to organise and direct the work as they saw fit. They were also to have the power to add to their numbers as necessity arose and to fill all vacancies caused by the retirement or removal of teachers from the district. This insured concentrated and permanent direction of the work under the leadership of those best in a position to manage the organisation.

"The first step of the new organisation was to appoint a business manager. Under his direction a booklet was issued in which an attempt was made to give greater publicity to the work and to outline the scope and aim of the 1913 exhibition. From this time until September, 1913, the work was entirely directed by the secretary of the committee, Miss Marie P. Grambo, Mr. T. W. Johnson, another member of the standing committee, and Mr. A. P. Brown, the business manager. During the winter and spring other booklets were issued in the interest of the movement, the money for which was obtained from private sources and from advertising. Every effort was put forth to interest every teacher and school board in the work. Funds were also collected to provide generous prizes for the competitors at the 1913 exhibition.

"The efforts of the School Garden Association (the title adopted by the committee) met with noteworthy results. Forty schools reported that they were planting gardens and intended taking a part in the exhibition. A large number of these stated that while unable to take up the work this year they would have their grounds broken up and fenced in preparation for 1914. The business manager and the secretary were deluged with inquiries as to the best methods to adopt in plotting school grounds, planting the gardens, correlating the outdoor work to the school course of studies and similar questions. These were answered as promptly as possible and as much assistance rendered as time and the pressure of other duties would permit.

"To lighten the burden of the secretary and business manager a reference library was begun. This, while not yet completed, contains a very fair list of books on school gardening, nature study and agricultural education, as well as a large supply of the pamphlets and reports of the various departments of education and agriculture, in both Canada and the United States, bearing upon various phases of the work. Literature has also been secured from other School Garden Associations throughout America, all of which is proving very useful in disseminating knowledge of the work in other fields.

"This year's Exhibition was held in conjunction with the Annual Convention of the Carrot River Teachers' Association, which was held at Kinistino in September. There were over seven hundred entries and the judges, Principal Snell, of the Saskatoon Normal School, and Professor Willing, of the University of Saskatchewan, had a difficult task in awarding the prizes. Seventy-five teachers and several hundred ratepayers of the school districts adjacent to Birch Hills, Kinistino, Melfort, Tisdale and Star City passed through the Exhibition building, all manifesting surprise at the magnificence of the display, and expressing their desire to have the work carried on more extensively another year. A snapshot of a small portion of the Exhibits is enclosed under separate cover, together with other pictures illustrative of the results being obtained.

"Photos Nos. 1 to 5 give an indication of what has been accomplished. Number 1 of this series shows Bastnes School (south-west of Birch Hills) as it appeared in 1908. The following year Mr. Hone took charge of it and planted a garden. So pleased were the ratepayers and the school children with what was done during 1909 that when Mr. Johnson took the school in 1910 he had no trouble in securing support for a continuation of the work. From that year until the present the school has been under Mr. Johnson's management, with the result that it has as fine grounds as any rural school in the Province. All the improvements are directly attributable to the school garden which inspired Mr. Johnson and his trustees to make the other modifications in the grounds. The school board now feels that the garden is an essential part of the equipment of the school. They are already planning next year's programme on a more extensive scale.

"Golden Rod School at Spring Grove, where Miss Grambo has been working this year, also furnishes a striking illustration of the transformation which the introduction of the school garden inspires. Inspector Hutchison made special reference to the improvements in this school at the Convention. He said that he had always had a dread of inspecting this particular school as it was so dreary and barren of interest. Its grounds were unfenced when he visited it in 1912, the building had a dismal aspect and the pupils themselves seemed sullen and ignorant. This year he visited the school in August and he could hardly realise that it was the same place. The grounds were levelled and fenced, and ornamented with flower plots. There was an excellent school garden—the best he had seen The interior of the school was tastefully decorated with pictures, flowers and potted plants. There were numerous nature study collections arranged on tables, and the pupils were alive and active; well up in their class work.

"An interesting feature of Miss Grambo's work in this school was her method of planting her garden. The class was formed into a surveying party with Miss Grambo as engineer. Under her direction, the garden was surveyed as a township of thirty-six sections, with proper allowances for roads. This provided a practical geography lesson. The class was next formed into a party of pioneer landseekers who picked out their quarter sections and then filed their claims with the land agent (Miss Grambo). Each homesteader was furnished with seed and instructed that in order to hold this land he must make certain improvements upon it such as planting and caring for his garden, keeping it free from weeds, improving the roads bordering on it, etc. The work was also made to provide material for composition, arithmetic, spelling, drawing—was in fact correlated to practically every subject in the course of studies. Insects and weeds were also collected in the garden and the attention of parents directed towards the eradication of the more obnoxious ones. Unfortunately the pictures sent do not begin to give one an idea of the work done at this school.

"Excellent gardening work was also done at Northern Light School. The grounds, until this year covered with heavy brush, were partially cleared and fenced, and a garden planted. Despite the fact that it was on new breaking, it produced several prize winning exhibits. Features at this school were window boxes, an ornamental rockery and flower bed arranged about the flagpole, and a trellis work covered with vines over the entrance to the school. Several trees and flowering shrubs were planted here, as also at several other schools throughout the district, including Golden Rod and Bastnes.

"These are instances of results accomplished under the personal direction of members of the committee. Similar results on a smaller scale, owing to less favourable circumstances, were obtained in various parts of the inspectorate.

"For the next season the officers of the association are as follows: A. P. Brown, Principal of the Birch Hills Village School, President and Managing Director; Miss Marie P. Grambo, Birch Hills, Secretary; T. W. Johnson, Birch Hills; W. H. Edwards, Principal of Kinistino School;

Mr. Hunt, Principal of the Melfort School; Mr. Dundass, Principal of the Star City School; and Mr. Sutherland, Principal of the Tisdale School, forming an advisory board and acting in the capacity of district managers.

"With this organisation the association hopes to introduce school gardens into every district in the Carrot River Valley. The reference library is to be supplemented with new publications dealing with gardening work and agricultural education, and is to be placed at the disposal of any teacher or trustee willing to pay for mailing charges. A number of issues of the *School Garden Journal* will be published, outlining proper methods and aims in carrying on the work, special attention being given to a number of other subjects also, such as landscape gardening, busy work in the primary grades and manual training. An attempt will be made to secure penny packets of seeds and to encourage teachers to co-operate with the Dominion and Provincial Departments of Agriculture in introducing new varieties of grain and vegetables. Active work along these lines will begin in January and every effort made to interest teachers and the public generally in the undertakings of the association.

"In conclusion I would beg to point out a few things which we feel the Department should undertake not only in our behalf but also for the entire Province:

"(1) This work could be more effectually carried on if definitely supported by the Department, such support to take the form of grants to teachers carrying on garden work, grants to school boards providing for gardens and field agents specially trained in matters pertaining to agricultural education to visit, direct and advise teachers and trustees.

"(2) The issuance of a monthly bulletin published with the authority of the Department, giving full publicity to work now being carried on and outlining plans for future work along better lines.

"(3) Teachers in this part of the Province would appreciate the establishment of a special summer school in gardening, nature study, etc., where they could be trained to carry on this phase of their work with greater skill and more expert knowledge."

B.—INDUSTRIAL EDUCATION.

(*a*) INTRODUCTORY.

In the industries, changing conditions, the increasing complexity of modern life, and the use of machinery have to a large extent broken down the old methods of preparing for occupations requiring skill and knowledge. The system of apprenticeship has almost disappeared, notwithstanding the efforts put forth to retain it in certain special occupations. Both employers and employed are looking for something to take its place and as indicated by the deliberations of legislative bodies, the reports of educational commissions, the conferences of labour organisations, manufacturers' associations and commercial clubs, the school is the agency through which the desired instruction can best be provided. A specific instance is to be found in the resolution of the Associated Boards of Trade of Western Canada passed at their Ninth Annual Convention held in Moose Jaw, September 18 and 19, 1912, some three months after the first session of the Commission. This resolution is given in the appendix to this report.

In the minds of all, two classes are to be considered: the student at school, and the young worker only partially trained who has already entered upon an occupation. The needs of the former call for a measure of industrial training in schools primarily organised for general education; the requirements of the latter demand special training in industry along with instruction in the related subjects of general education in schools whose main purpose is training for industry.

The ultimate object to be attained by such instruction differs according to the point from which it is viewed. To the manufacturer this object is increased power of production on the part of the worker and thus a means of promoting industry and enabling it to hold its ground in the keen competition of modern business methods; to the workman it is a means of increasing his power as a wage earner and his effectiveness as a citizen. Looked at from both points of view such education is for the benefit of the community, individually and collectively, and is entitled to support on the same grounds and to the same extent as general education.

At every industrial centre in the older communities visited, your commission found work of this character established, in some cases by the institution of special schools, in others by the introduction of special instruction into schools organised for general education. In the lower grades this industrial work naturally took the form of elementary hand work, leading up to manual training for the boys and sewing and cooking for the girls.

For the most part the aim of this work is educational. It is intended to discover and develop aptitudes, to form habits of careful and exact work and to give a measure of hand and eye training, all as a preparation for industrial education. It does not by reason of the age of the children and the conditions under which instruction is given attempt as a rule to take account of the economic elements of production, a consideration of which is essential in industrial education.

There are, however, a few exceptions to this in classes below the high school, where work of a distinctly vocational character is undertaken for boys of the sixth, seventh and eighth grades of the elementary schools.

Good examples of this are the Factory School at Rochester, and the Independent Industrial Schools of Massachusetts and Connecticut, a description of which is given in the body of the report.

INDUSTRIAL TRAINING IN SASKATCHEWAN.

(*a*) ELEMENTARY SCHOOLS.

Elementary hand work and the subjects to which it leads are gradually being introduced into the schools in the more progressive towns of Saskatchewan. Authority for this is found in the recent legislation which provides that the board of any district subject to the regulations of the department in that behalf shall have power:

"To make such provision as it deems advisable for giving instruction in its schools in manual training, industrial training, domestic science and physical training;

"To make such provision as it deems advisable for industrial evening schools in which persons employed during the day may receive theoretical and practical instruction in the trades or occupations with related instruction in English, mathematics, drawing, science, history and geography;

"To appoint an advisory committee of at least seven members, the persons so appointed to be resident ratepayers of the municipality in which the school is situate and to be selected on the ground of competence to give advice and other assistance in the management of such classes or schools as may be established under the foregoing subsections;

"Subject to the approval of the minister the board shall have authority:

"To provide suitable accommodation and equipment for such schools and classes as may be established under clauses 1 and 2 hereof;

"To prescribe subjects of study; and

"To make provision for examinations and diplomas.

"The board shall have authority to employ and dismiss teachers and fix their salaries; to fix the fees payable by students in attendance and to do all things necessary for carrying out the true object and intent with respect to any schools established under the provisions of clauses 1 and 2 hereof."

The evidence given the Commission shows conclusively that such work is believed by the teaching profession and the community at large to be of great value. The rural and the village districts have not as yet availed themselves of these provisions of the Act. A few of the cities, however, have made a good beginning and a brief outline of what is being attempted in the elementary grades has been submitted by the city superintendents.

MOOSE JAW.

Some four years ago a beginning was made in the Moose Jaw Public and High Schools in industrial work. Supervisors were appointed in domestic science and manual training, and equipment installed.

In domestic science, needle work and sewing was organised for all girls in the public schools up to Grade V. From Grade V up to the first year in the Collegiate institutes, the girls were given cooking in a room equipped for the purpose.

In manual training at the same time work was organised for both the boys and girls up to Grade V. The boys in the other grades took wood work in a bench room.

During the past four years this system has been extended throughout all the new schools. At present there are three centres for cooking and three for bench work, and three teachers are employed in each department.

About a year and a half ago steps were taken to organise more advanced work and to purchase more equipment. This consisted of tools for copper and iron work, lathes for both wood and iron, vises, forges, universal saw, drills, drafting tables and tools. It is now installed and work is being carried on.

The subjects now being taught in the industrial evening classes are as follows: Carpentry, metal machine work, copper work, cookery, electricity, biology and agriculture, chemistry, dress and mantle making, drafting, consisting of elementary architectural, mechanical and building construction, shorthand, typewriting, commercial arithmetic and book-keeping.

The number of students registered at the evening classes at the present time is 364.

To date there has been expended on equipment:

For manual training	$2,373.00
For domestic science	3,605.55
For lathes, saws, forges, drills, vises, etc.	4,577.12
Total	$10,555.67

REGINA.

Manual training was first given to the boys and girls of the public and high schools during the fall of 1901, the whole of 1902 and the spring of 1903 under the Macdonald Manual Training Fund, but was then discontinued. In June, 1909, the public school board decided to re-establish it and a teacher was appointed.

The manual training work of Grades I to IV is done by both boys and girls in the class rooms at the desks, but of Grades V to VIII is done by the boys only at benches in specially equipped rooms.

The manual work in Grades I and II consists of modelling in plasticine alternated with paper cutting and pasting and raffia work, all forms of work being closely associated with object drawing, illustration and design. In Grades III and IV, paper and cardboard are used in making envelopes, boxes and simple books. Most of the mechanical drawing design is done in this connection. Modelling lessons alternate with the cardboard work for one-half of the year. The boys of Grades V and VI make small useful articles of simple construction in wood, while those of Grades VII and VIII, in addition to making more difficult pieces of wood work, also do simple work in sheet iron, copper and brass. One class of Grades III and IV boys (mostly of foreign birth) do light wood work at their desks under the instruction of the school principal. Manual training is also given to one class of mixed grade backward boys—one hour a day at wood work at the bench and one hour a day at other manual work at their desks.

For the manual training desk work (Grades I to VI) the pupils are provided with materials and scissors. For the bench work (Grades V to VIII) there are at present four specially equipped manual training rooms or "centres" in operation. Each of these is supplied with twenty small woodwork benches and a full set of individual and special tools. There is also an equipment of vises and tools for light metal work in each centre. There is one wood turning lathe in each centre. Two more manual training centres are under construction and will be similarly equipped.

The instruction in bench work is given by special teachers. The instruction in desk work and art is given by the class teacher, except in Grade VIII, where the art work is done by a special teacher of art.

Sewing was introduced at the beginning of the fall term of 1909. Sewing is taught in Grades IV to VIII by the grade teacher. The work of each year has been so framed as to encourage the making of small articles rather than large ones.

The following records are kept by the teachers:

1. Each teacher is required to keep a note of all garments and articles made during each year by each child under her charge.
2. Each teacher keeps a record of her estimate of the skill of each child.
3. Each teacher keeps a speed record for each child.
4. In all cases teachers are requested to have children mark garments in such a way that each may show the date on which it was begun and finished and the number of hours required for its making.

Samplers containing about one-half a yard of cotton cloth are introduced for the purpose of keeping an objective record of each child's attainment in fundamental operations. The teachers are advised to give ample practice upon sampler stitches before applying them to the sampler, as it is to be the child's permanent record of maximum skill at a given point in her school course.

A cooking centre was opened in November, 1909. There are at present two cooking centres and it is the intention to establish cooking centres in all the larger schools. The cooking is taught by a special teacher, but at present all teachers of Grades IV and up are taking a special course to qualify them to teach their own classes under the supervision of the special teacher.

SASKATOON.

While industrial education is in its infancy in Saskatoon at present, the ground work is being prepared for extensions of quite ambitious proportions. Firstly there is an elaborate system of hand working in the three lower grades, branching out into geometrical drawing in Grade IV in connection with cardboard instruction and into mechanical drawing in the grades between this and the high school. The way is open for pre-vocational work in the four wood working centres where manual training is taught. Secondly, by the inauguration of night schools this fall a start has been made along industrial lines for persons engaged or about to engage in industrial vocations. These classes are conducted with a view to steady enlargement of scope as extensions are demanded, and the equipment in the manual training department of the public schools is selected with a view to its utilisation in as large a degree as possible for the purpose of technical instruction.

Instruction in household science is being given in the night schools at two centres, more than forty students being in attendance at these classes. Classes in general subjects are being conducted in two centres, these being equally well attended. Instruction is along practical lines, and many persons engaged in industrial pursuits during the day are on the roll.

In an endeavour to meet the demand for elementary technical education the public school board of Saskatoon inaugurated at the beginning of October two classes in industrial education. In one, practical wood working is taught, embracing construction of joints, their application, cabinet making, tool operations, mechanical processes, selection of lumber, finishing of woods, etc., and a short course in mechanical drawing. In another, mechanical drawing is taught, there being an enrolment of sixteen in this class, the idea being to pave the way by the teaching of this subject this year for the introduction next year of machine drawing, architectural drawing, etc., for which subjects a demand already exists. These classes are conducted twice a week for two hours a night and are much appreciated by those enrolled in the classes.

A fee of $3 for the general course, and of $5 in the other courses, has been charged for tuition, etc. The board supplies practically everything necessary for the use of the students. Six different teachers are employed in the night schools, which it is expected will continue in operation for a period of about six months from the date of commencement. For this period the salaries for teachers will amount to between $1,000 and $1,100. The fees will amount to something less than $500, leaving about $600 deficit on salaries, apart from other operating expenses. This will be met by the public school board which has provided in the estimates for this work.

PRINCE ALBERT.

Provision has been made during the present year for certain forms of industrial work in the Prince Albert schools. During the summer vacation a room was equipped for teaching domestic science in the high school building at a cost of approximately $1,200. There is provided every accommodation for a class of twenty-four and the work is in charge of Miss E. H. Sillars, a graduate of the Edinburgh School of Domestic Science.

The individual heating stoves are small electric heaters and in addition there is an ordinary kitchen range. The electric stoves seem to be giving great satisfaction.

By a joint arrangement between the public and high school boards the senior girls from three of the large public schools attend domestic science classes in the morning while in the afternoon the high school girls are taught.

The public school board has decided to introduce manual training next September, while the high school board has asked the Superintendent of Schools to report to them on manual training and to arrange a joint meeting of the two boards for the purpose of discussing the introduction of a course in manual training under the joint control of the two boards. In the event of the two boards entering into a joint arrangement it is probable that two centres will be established before next September.

The high school board has arranged for an evening class in domestic science one evening per week throughout the winter and already several have been turned away from this class on account of lack of accommodation. The high school board also offers a Saturday morning class in domestic science, which at present has an enrolment of about twenty.

The public school board has opened evening classes divided into two main groups, one for the non-English and one of a general nature. These classes have been recently organised and already are being well attended. That they are filling a long felt want is made clear by the enthusiasm with which they have been received by the people.

The nominal charge of $2 is made for a complete course of twenty lessons in domestic science and for evening classes in other subjects a deposit of $2 is made which is returned to those making 80 per cent. of the attendances.

(b) HIGH SCHOOLS.

Real industrial training begins with the high school and must be based on a good elementary education. At this stage the pupil is looking forward to his future vocation and is old enough not only to understand the advantages of an opportunity for preparation but to comprehend the instruction given.

Many industrial processes lend themselves to organisation for educational purposes and experience has shown that the content of an industrial course appeals to the interests of large numbers of students to whom purely academic work is distasteful. Many of those who would otherwise leave may be retained to the end of the secondary school course by the introduction of industrial work, and thus be prepared to enter upon the work of life equipped with some special training for occupation and a good general education.

Opinion in Saskatchewan, as gathered from the evidence taken by your Commission, is strongly in favour of supplementing the education at present offered in our high schools by some well considered scheme of industrial training suitable to the locality in which the school is situated, as well as by advanced work in household science and allied subjects for the girls who are to be the homemakers of the future.

The opinion was also strongly expressed that the high school should serve the community by giving some instruction in subjects necessary for entry into commercial life. Authority for the introduction of certain forms of industrial work into high schools is already given in The Secondary Education Act, which provides that "the board of every high school district, subject to such regulations as may be approved by the minister in that behalf, shall have power to make such provisions as it deems advisable for giving instruction in its school in manual training, domestic science and physical training." Thus it will be seen that the board of any district, whether public school or high school, has the necessary authority for introducing such forms of industrial education as may be considered suitable to local conditions.

Up to the present very little if anything has been done of a vocational nature in the high schools except in so far as the teachers course and the commercial course are concerned. The former of these courses is referred to elsewhere in this report. In regard to the latter, a good beginning has been made in a few high schools of the province and others are preparing to follow their example. This course is vocational and is intended to afford a preparatory training for entry upon business occupations and at the same time to give the student the advantages of a good general education. The course covers two years and is as follows:

FIRST YEAR.

Bookkeeping and Business Papers.—Simple business forms: receipts, promissory notes, drafts, orders, deposit slips, cheques, bank drafts, bills of goods, invoices, accounts, indorsement and consequent liability. Double and single entry: involving the use of journal, cash book, invoice book, sales book, bill book, ledger, balance sheet and statements:

Total resources.... =
Total liabilities.... =
Present worth...... = difference

Total gains......... =
Total losses....... =
Net gain or loss.......... = difference

Net investment.......... =
Net gain.............. =
Present worth.......... = sum

Closing the books: single ownership and partnership sets. Changing from single to double entry.

Shorthand.—Pages 1-77 of Isaac Pitman's Shorthand, Canadian edition.

Typewriting.—The touch method, letter writing; addressing envelopes; speed twenty words a minute.

Commercial Arithmetic.—Review of decimals and elementary mensuration, percentage, simple and compound interest, taxes, insurance, commission, duties, trade discount, stocks, etc.

Rapid Calculation.—Correctness and rapidity in addition, subtraction, multiplication and division.

SECOND YEAR.

Bookkeeping.—Use of special columns in books of original entry. Partnership and the sharing of profits by different methods. Commission business, trading accounts and comparative statements; simple joint stock company accounts; practical treatment of freight, duties, discounts, bad debts.

General Commercial Law.—Different kinds of contracts, negotiable paper, statute of frauds, statute of limitations, partnership.

Shorthand.—Speed of eighty words per minute. Transcription on the typewriter at the rate of fifteen words per minute.

Typewriting.—The touch method, letter writing, addressing envelopes and postcards. Speed of thirty words per minute.

Commercial Arithmetic.—Trade discount, banking questions, analysis of trading accounts and profit and loss accounts; compound interest and partnership problems.

Economics.—A general outline, including the elements of production, land, labour, capital, organisation for production of labour, of capital, distribution of the products as wages, interest, profits and rent.

Accounting.—Simple auditing, cost accounting, goodwill, depreciation, reserve, manufacturing accounts, partnership adjustments, self-balancing ledgers, analysis sheets for expense and for departments.

In the first year the student is required to take in addition the following subjects prescribed for teachers' diplomas and regarded as necessary for a general education: reading and literature spelling, composition and rhetoric, history, physical geography, drawing; and in the second year the following: reading and literature, spelling, composition and rhetoric, grammar, arithmetic and mensuration, history.

(c) NORMAL SCHOOLS.

The following statements have been received from the principals of the Provincial Normal Schools at Regina and Saskatoon:

REGINA.

The following is an outline of the work being done in the various branches:

In manual training the students have made or are making the following:

1. A drafting board and T square, together with the triangular drawing instruments connected with the drafting.
2. A set of flower boxes for the school windows.
3. A pair of blackboard compasses.
4. A picture frame.
5. The drafting of a design for a suitable rural school manual training bench.
6. An instrument for holding five blackboard crayons for the purpose of drawing easily the music staff on the blackboard.

The object is to have the students in their manual training course work on things that will be of actual use in their subsequent school work. This will give the mechanical accuracy with the added interest of some ulterior permanent end in view, and in this way it is hoped will be more valuable to them than work on models where the mechanical accuracy is the only interest. So far this term the work has been good.

In sewing the same policy is followed. The students learn first the various useful stitches, then they make the various articles of clothing required for a little girl of seven years old. These clothes the students learn to cut out and make from patterns so that they will be able to do useful work for the children in their own schools. In addition to this they make one or two garments for themselves. They take a splendid interest in this line of work, and it is thought much better than the old plan of spending all the time on the mechanical part of the work alone, such as stitches, buttonholes, etc. This in outline is the work endeavoured to be done at present, and it promises to give satisfactory results.

SASKATOON.

Arrangements have been made with the public school board whereby the supervisor of domestic science in the schools is giving one-half day per week to instruction and practical demonstrations in domestic science to the young ladies of the second and first class session. No instruction at present has been given to the male students in manual training, but it is anticipated that arrangements will be made at the opening of the New Year whereby the male students of the first and second class sessions will devote the same time to manual training as the female students are doing to domestic science. The instruction will be given by one of the instructors in manual training in the city schools.

It has not been deemed advisable to give any instruction in these subjects to third class teachers-in-training as they are in the Normal School so short a period that they would not receive very material benefit, while at the same time this work would detract from other work which is of paramount importance. Neither is it deemed wise to increase the time given to these subjects to the first and second class teachers-in-training until the length of the session is materially increased. It is hoped the time is not far distant when it will be possible to take this forward step. This is especially necessary for the first class students, the majority of whom have had absolutely no previous Normal School training, and are thus not even on a par, in some respects, with the second class students.

C.—RECOMMENDATIONS OF THE COMMISSION ON AGRICULTURAL AND INDUSTRIAL EDUCATION.

After inquiry into conditions in Saskatchewan and examination of the efforts already made to introduce some measure of agricultural and industrial education into the schools together with a study of the attempts of older communities to solve the same problems, your commissioners are of the opinion that it is essential in the interests of the Province that such education should be amplified and extended, and that the school system as now organised is sufficiently elastic to admit of the fuller introduction and effective prosecution of this important work. The necessary authority has already been provided. If existing educational agencies are utilised the initial expense and the cost of maintenance will be much less than if special schools have to be established and the possibilities of friction through conflict of authority materially lessened.

For these reasons your commissioners are of the opinion that for the furtherance of agricultural and industrial education, it is desirable as far as possible at the present time to use existing agencies—the public schools, the high schools, the normal schools and the University (including the College of Agriculture).

In pursuance of this your commissioners beg to recommend:

GENERAL CLAUSE.

1. That systematic efforts should be made to introduce more generally into the public schools the subjects of nature study and school gardening, manual training and elementary household science and to provide in the more advanced schools such instruction and training as will prepare teachers and leaders in these departments.

RURAL SCHOOLS.

2. That for the purpose mentioned in the foregoing section an initial grant be made to each rural district providing the necessary accommodation and the minimum equipment prescribed by the Department of Education, such grant to be proportioned within fixed limits to the amount expended on equipment for any or all of these purposes.

3. That an annual grant be made to each rural district providing the necessary accommodation and the minimum equipment prescribed by the Department of Education and giving satisfactory instruction in any or all of these subjects.

4. That during vacation periods or when the schools are not in operation, and upon satisfactory evidence being furnished to the Department of of Education that such courses are necessary and in the public interest, provision be made in rural districts for giving short courses in agriculture and elementary science to the young people of the community by travelling expert instructors.

VILLAGE AND TOWN SCHOOLS.

5. That an initial grant be made to each village and town district providing the necessary accommodation and the minimum equipment for nature study, school gardening, manual training and elementary household

science as prescribed by the Department of Education, such grant to be proportioned within fixed limits to the amount expended on equipment for any or all of these purposes.

6. That an annual grant be made to each village and town district providing the necessary accommodation and the minimum equipment specified in the foregoing clause and giving satisfactory instruction in any or all of these subjects.

7. That in order to encourage the establishment of industrial evening schools in which persons employed during the day may receive theoretical and practical instruction in English, mathematics, drawing, science, history and geography as provided in section 92(*a*) of The School Act a special grant be paid to any district establishing and conducting such a school in accordance with the provisions of the said section and the regulations of the Department.

HIGH SCHOOLS.

8. That boards of high school districts be urged to make the necessary provision for short courses of instruction in agriculture during the winter months in accordance with the regulations governing high schools and collegiate institutes and that an adequate grant be paid to high school districts providing the necessary equipment for such courses and giving satisfactory instruction therein.

9. That high school boards be authorised to make provision for instruction in advanced manual training and household science and such specialised forms of industrial work as may be deemed advisable taking into consideration the general demands of the Province and local conditions, provided that the regulations of local boards governing such instruction and the work done in connection therewith shall have the approval of the Minister of Education.

10. That an initial grant be made to high school districts providing the necessary accommodation and the minimum equipment prescribed for the departments mentioned in the foregoing section, such grant to be proportioned within fixed limits to the amount expended for equipment.

11. That an annual grant be made to high school districts giving satisfactory instruction in these departments.

NORMAL SCHOOLS.

12. That for the purpose of familiarising teachers-in-training with approved methods of instruction in school gardening and elementary agriculture, manual training and elementary household science, increased facilities be provided for dealing effectively with these subjects in the Provincial Normal Schools.

UNIVERSITY.

13. That as the complete development of agricultural education is found in the college of agriculture, it is desirable that steps be taken to establish in the University a school of domestic science and a college of technology for a corresponding development of industrial education.

EXAMINATION EQUIVALENTS.

14. That the Department of Education be asked to accept either agriculture or household science in lieu of physics or chemistry in the examination for third and second class teachers' diplomas.

15. That the University be asked to accept either agriculture or household science in lieu of physics or chemistry at the junior matriculation examination.

EXPERT DIRECTION.

16. That competent persons with expert knowledge be appointed to stimulate, organise and supervise such work as may be undertaken in public and high schools in school gardening and agriculture, household science, manual training and related branches.

DISTRICT REPRESENTATIVES.

17. That provision be made as soon as possible for the appointment of expert district representatives corresponding to the itinerant instructors in Belgium and Denmark and the district representatives in Ontario to assist the Department of Agriculture and the College of Agriculture in promoting the welfare of rural communities.

D.—AGRICULTURAL EDUCATION—*What is being done elsewhere.*

Your commissioners think it advisable to submit the following brief outline of leading features in the movement for agricultural and industrial education in other communities in order to show the extent of the movement, the way in which its problems are conceived and some of the attempts at solution.

Most of the matters described have been examined into at first hand either by the Commission as a whole or by individual members, while for some of them reliance has been placed on authentic official records. The importance of these phases of education to the people of Saskatchewan for the development of their material resources calls for the fullest information.

AGRICULTURAL EDUCATION IN ALBERTA.

Statement from the Deputy Minister of Education:

"The Department of Education in Alberta has been devoting a considerable amount of attention to the subjects of nature study and agriculture in the elementary grades, and was aiming at a one-year's course which would be compulsory for all students desiring to obtain teachers' certificates. Up to the present, however, no definite action has been taken in this respect.

"The Department of Agriculture has established three agricultural high schools at demonstration farms in the Province and *curricula* for these schools are now in course of preparation. It is intended that the courses in addition to scientific agriculture will provide for instruction in English, elementary mathematics and science. The course will extend over two years, and it is the intention that graduates shall be equipped with a good practical knowledge of agriculture. Those desiring to proceed further in these studies will be given a final two years' course in the Provincial University from which a degree in agriculture may be obtained.

"At the present session of the Legislature a Bill has been introduced providing for special grants to rural, village and town districts for the encouragement of the teaching of school gardening and the teaching of agriculture. There is also embodied in the Bill a further provision for the appointment in town districts of supervisors in these special departments, who are to rank as teachers if their qualifications are approved by the Minister. It is expected that this provision of The School Act will come into force on the first day of January, 1914."

SCHOOL GARDENING AND ELEMENTARY AGRICULTURE IN MANITOBA.

The following statement of what is being done in this Province has been prepared by Mr. H. W. Watson, Director of School Gardening:

The beautifying of the grounds by planting trees, shrubs and flowers, and the planting of garden plots have been practised in some schools for many years, but the movement was given a definite start in a general way in the year 1909.

In an address to the teachers of the Province in 1909 the Minister of Education definitely announced his intention to emphasise that phase of work in the rural schools, and stated that teachers attending the second class session of the Normal School would be required to spend an additional month at the agricultural college to prepare for the teaching of the elements of horticulture and agriculture. Since May, 1909, two classes of students at the normal school have received each year a month's instruction at the agricultural college.

In July of the same year the paper for elementary science for Part I third class teachers' examination was made more practical and dealt particularly with plant life from an economic viewpoint.

In 1910 an outline for nature study in the grades, based chiefly upon observations in the school gardens, was placed on the programme of studies.

In July, 1911, a paper in elementary agriculture was set for those writing on the entrance examination for high schools. In the same month a summer school of science was established for those teachers who had not received the month's course at the agricultural college and for those that had come in from outside provinces.

In July, 1912, a director was appointed to have charge of elementary agriculture, school gardening and nature study in the schools. The duties performed by the director have been addressing conventions, visiting schools individually with an illustrated lecture on the work, the planning of school grounds and furnishing material for planting of the same.

In April 1913, the following distribution of material was made on application to 168 schools:

15,000 windbreak seedlings	free
664 packets of grains	
271 parcels of potatoes	
298 ornamental shrubs	at wholesale prices
536 perennial flower roots	
4,528 packets of vegetable and flower seeds	

In September, 1913, a distribution of over 5,000 bulbs was furnished upon application at wholesale prices to forty-eight schools. During November, 1913, five secondary schools secured qualified teachers and added a course in agriculture for farm boys, similar to the first year course at the agricultural college.

The Department of Education agrees to pay half the salary of a qualified teacher and half the cost of all necessary equipment for such a course.

AGRICULTURAL EDUCATION IN ONTARIO.

In Ontario there has been a marked advance in the attention given to agricultural education in the last five years and a keen interest is shown in so far as the work of the Department of Education and the public and high schools of the Province are concerned. In public schools the work has been carried on under the name of "nature study and school gardening," but it is none the less agricultural. Many agencies are at work to give encouragement to agricultural education. The Department is alive to its importance, the inspectors of schools seem in sympathy with the movement, and the provision for training courses for teachers in rural and high schools and the advanced practical instruction in the Agricultural College at Guelph are also vital factors in connection with its advancement.

In 1910, fourteen regularly organised school gardens, for which special grants were paid, were in existence in the Province; in 1911, thirty-three, and in 1912 there were one hundred. This year there will be about one hundred and seventy-five schools which will share in the funds set apart to encourage the teaching of agriculture in the public schools. School boards are beginning to give preference to teachers who hold certificates in elementary agriculture, and of these some two hundred and fifty have been trained during the past three years in the Agricultural College at Guelph. Many schools give practical instruction in agriculture and have gardens, but do not participate in the government grant by reason of the fact that they do not meet all the requirements imposed in the regulations in regard to systematic instruction, keeping records of work and reporting on it to the Minister at the end of the year. In a number of schools work is being done by the pupils in home gardens under the teacher's direction, and frequently observation plots are cultivated on the school ground. Both home and school gardening schemes are recognised and grants paid to teachers not certificated in agriculture, although this is less in amount than that paid to the specially trained teachers.

To provide trained teachers provision has been made by the Department of Education for a ten weeks' course of instruction at the Agricultural College, Guelph, for Normal students, and this is taken in April at the end of the Normal School course. It is free to all, the Department providing transportation to the college and lodging while at the college. Applicants for this course are required to pledge themselves to three years' service in teaching in the schools of Ontario and to give instruction along the lines of the special training they have received.

The object of the course is to train teachers in subjects bearing directly on agriculture and school gardening, and the needs of the rural schools are kept prominently in view. The course is made as practical as possible, special attention being given to such subjects as school gardening, botany, horticulture, field husbandry, physics and entomology. At the end of the course a certificate in elementary agriculture and horticulture is given to those whose work has been such as to justify it.

Teachers who are in positions receive their training in the summer school. For attendance at two five-weeks' sessions and a winter reading course, the certificate is granted. At the summer school, rural and village school teachers receive their travelling expenses only.

In high schools the work in agriculture has up to this year been in connection with the course in elementary science. The work is specifically outlined and includes such topics as plant propagation, weeds and weed seeds, plant diseases, economic insects and breeds of farm animals. It is thought that pupils taking up high school work for only one or two years will find this of great practical value in connection with farm work; or if they enter the teaching profession they will be much better prepared to teach nature study and agriculture in the rural schools than they otherwise would be. In 1912–13 a special agricultural option was permitted in the lower school science studies. For 1913–14 this has been extended and the option will have an examination value. Schools and teachers taking the option will receive special grants as in the public schools. The science teachers are trained for this at the Ontario Agricultural College in two five weeks' summer sessions and receive the intermediate certificate in agriculture. The first class was held this summer and was attended by twenty-five teachers.

Naturally, it is expected that the work will take time to develop by reason of the fact that teachers are not prepared for the change. Public opinion, however, will go far towards bringing the movement into prominence. Boards of trustees are now requiring teachers to have a practical knowledge of the subject, while teachers of science are striving to make their work more effective through a knowledge of agricultural conditions.

The district agricultural representatives appointed by the Government do the greater portion of their teaching work in the schools during the months of January, February and March. Courses are arranged for young men who are actively engaged in farm work, and the character of instruction given deals directly with the affairs of the farm but may be varied by the district representative to suit local conditions. These officials do a great deal in the rural schools, also, particularly in promoting township school fairs.

MICHIGAN.

In 1909 an Act was passed by the Legislature providing for a State commission on industrial education, such to include elementary training in agriculture. The commission was known as the "Michigan State Commission on Industrial and Agricultural Education." It was empowered to make a careful study of the conditions of elementary, industrial and agricultural education, including the study of conditions of labour as such affect children between the ages of fourteen and eighteen. It was required also to present a report showing these conditions and to make such recommendations respecting a plan of elementary, industrial and agricultural training in connection with the public schools of the State as would best meet the conditions shown to exist. In submitting their report the commission urged "the enactment of such laws as would encourage and hasten a readjustment of public education to meet the growing needs of an agricultural and industrial state." Some of the conclusions and recommendations of the commission are of special interest to us at the present time in view of the conditions prevailing in our own Province. For instance, the commission recommended the introduction of courses in agriculture, manual training and home economics in all high schools of the state.

After reporting upon the general agricultural conditions throughout the States, special mention was made of the county type of agricultural school in Michigan and Wisconsin. These are state secondary schools with a two-years' course to which students from the eighth grade are admitted. The underlying principle of these "county" schools is to bring instruction in elementary agriculture as near the people as possible and to train young men and women for a successful career on the farm.

A typical school of the latter type is found in the county agricultural school at Menominee, Michigan, where the school is well equipped for manual training and domestic science work and also with equipment for agricultural work and dairying in particular. The laboratory work is supplemented by observation on farms in proximity to the college. A short course for farmers was given and some 500 farmers took advantage of this means of instruction. The population of Menominee county is largely foreign-speaking. It is conceded that very few children who attend the county school would be in a school at all were it not for this institution, the prime object of which is to train young men and women for actual life on the farm.

In the public high school type of agricultural school several plans are found: one, the introduction of a one-year course in elementary agriculture into the regular high school curriculum; another, the introduction of a course of study in agriculture consisting of four units which continue through the several grades of the high school as an elective subject.

In their general observations on these special schools, the commission were of the opinion that while they attracted some attention and did a much needed work, it would be much better in view of the large expenditures necessary in connection therewith, if a strong effort to interest the people more thoroughly in the public schools were made, and especially in the high schools, and to introduce therein special or vocational courses rather than to organise a separate and special educational system for secondary vocational instruction.

The introduction of the subject of agriculture into the high schools in Michigan was begun about three years ago with one experimental school. In 1911 regular courses in agriculture were given in eleven high schools of Michigan. In 1913 the number had increased to thirty-three. In addition to the work done in the high schools partial courses in agriculture were given in a number of other centres. Up to the present time instruction in agriculture has been largely confined to some of the smaller villages and cities which have a large nonresident attendance but plans are under way to introduce the course in some of the larger cities of the state.

An interesting feature in connection with agricultural instruction in Michigan lies in the fact *that it has been accomplished without any state subsidy or state aid.* The main factor in the movement up to the present time is the interest displayed by the superintendents of schools and by boards of education. As a number of other States of the Union through the action of their Legislatures are offering subsidies to such high schools as will introduce a systematic course in secondary agriculture it will undoubtedly be only a matter of time until Michigan will enter upon a similar policy.

In the words of Professor French, of the Agricultural College at Lansing, agriculture will in the course of a short time "become a component part of the courses in our high school but the great need for scientific information and for a knowledge of the principles of successful agriculture constitutes sufficient ground for very radical measures in order that such information may be placed quickly before our people."

Agriculture is made an elective subject in each grade of the high schools, thus constituting really an agricultural department, parallel with that of history, English language and mathematics. The important subjects pursued in the College of Agriculture are selected for the secondary work, it being understood that the secondary course shall include the fundamental facts, principles and theories suited to the students of secondary grades. The faculty of the Agricultural College has prepared a series of syllabi for the guidance of the instructors and has suggested apparatus, reference books and other necessary material.

The instructor of agriculture in each high school teaches in addition one subject found in the regular curriculum. The Agricultural College is making a special effort to train teachers of secondary agriculture, and up to the present a graduate of the college has been in charge of the course in each of the high schools. It is recognised that if proper results are to be secured through agricultural courses the instruction must be given by trained teachers. No great amount of good can result from instruction in a technical subject by one who has no training in that line, and text-books are of little use when placed in the hands of one who knows little or nothing of the principles underlying the statements made in the books.

In regard to the effect upon their high schools, one cannot do better than to quote the words of Professor French in his report published by the Agricultural College:

"The instruction in agriculture in the class room has been along the usual lines pursued with the other academic subjects. The students have used certain text-books, and in addition to the text-book work, they have had excellent training in English through the making of written records on farm observation, and opportunity is afforded for mathematical training in making computations regarding crops, dairying, construction of farm buildings and fences and the arrangements of fields. In this way the students have derived much benefit from the agricultural instruction as related to the regular work in the high school. In addition to the class room work the students have engaged in experimental work in gardening, dairying, feeding live stock, pruning, grafting and in setting up farm machinery.

"It was suggested to each school that a permanent plot for grasses and legumes should be established, and a number of the schools have very excellent plots in process of development. The students have experimented with alfalfa, using both inoculated and uninoculated seed. It is believed that this plan of treating the subject of farm crops will prove of much practical value to the students and to the community. In several schools corn contests have been organised and great interest is being taken to see the results which shall be secured and to the outcome of the contest. In one school a stock-judging contest was arranged between the farmers and the high school boys, and the boys secured the largest number of points. Their keen perception and quick eyes, together with the accurate knowledge which they had secured enabled them to carry off the prizes."

"So far as observations upon surrounding farms are concerned, these have included a large variety of subjects, such as farm buildings, farm machinery, spraying, pure bred and grade herds, methods of handling fertilisers, destruction of orchard pests, pruning of orchards, fence construction, laying of tile, use of gas engines, care of farm tools and construction of silos. In each case the students making the observation were required to report definitely upon what they saw, and to make such criticism and suggestions as their theoretical work in the class room would suggest and which would increase the efficiency of the farmer."

In regard to the question as to whether it is practicable to teach agriculture in the public schools and whether the results justify the efforts and expenditures, Professor French says that already more than fifty young men who had intended to leave the farm have declared their intention to make farming their permanent occupation. It is the unanimous opinion of the teachers that the attitude of the entire school is much more favourable toward agriculture than before the instruction was presented.

Through the winter months a series of meetings for the farmers of the several communities where agriculture is being presented in the high school were held, and at these meetings members of the college faculty and the regular instructor in agriculture discussed a number of topics of special interest to farmers. Great interest was manifested, and it would seem as if such a course of lectures were destined to become a prominent part of the agricultural instruction in high schools. The effect of this work was noticeable in the several communities and the attitude of the people in general was very favourable to the continuance both of the regular high school course and of the special extension work.

MASSACHUSETTS.

The Massachusetts Legislature of 1910 directed the Board of Education to report upon the desirability and practicability of establishing a system of vocational agricultural instruction throughout the Commonwealth. Dr. David Snedden, State Commissioner of Education; C. A. Prosser, then Deputy Commissioner, and R. W. Stimson, Special Agent, made the preliminary investigation and prepared a report. The recommendations were approved and funds were at once provided for putting the proposed plan into effect.

Some of the findings of their report are as follows:

"Massachusetts farming, where most profitably practised, is peculiarly dependent upon and responsive to scientific knowledge and improved methods. Its increasing diversity and specialisation, which are such promising elements in its progress, make more difficult the task of preparation for it, and make more emphatic the duty of the State to the boys and girls who are to follow it.

"There is a decided lack of and a pronounced demand for agricultural training of a scientific and very practical character, suitable for boys and perhaps for some girls, fourteen years of age and older, who expect to gain their livelihood from and to spend their lives on Massachusetts' farms.

"The growing commercial and industrial school facilities open to boys and girls fourteen years of age and older tend to lure away from the land and into the congested centres in the absence of competent and attractive agricultural education, many young people whose natural aptitudes would make them, if properly trained, better and more prosperous citizens in the country."

"School committees have long been authorised and empowered to provide instruction in agriculture in the public elementary and high schools of the State. While this has been more liberal and cultural than vocational in its aims and results it merits the hearty support of local committees.

"Instruction in gardening and in other matters relating to the farm should be encouraged and guided in all the elementary schools of the State where the home environment or the school facilities make productive work and personal observation by the pupils practicable.

"As an important aid to liberal education in all of the high schools of the State, particularly in those which have a rural environment, guidance and encouragement should be given with a view to the incorporation of generous proportions of agricultural subject matter in science instruction, and to the sympathetic correlation of certain parts of the instruction in English, history, civics and hygiene with rural life and labour, institutions and progress.

"In order that more adequate school facilities may be provided for preparing those above fourteen years of age for productive and profitable farming vocational agricultural departments in existing high schools are proposed in this report for establishment.

"We recommend that provision be made for the establishment of agricultural departments in existing high schools with state aid, and with rigid definition and enforcement of vocational standards."

The suggestions respecting agricultural departments in high schools herein made are somewhat along the line of what is now being done in the Province of Ontario. For the agricultural department of the high school a teacher is employed, who in addition to being a practical farmer has had agricultural college training. He is required to devote his entire time to the agriculture. He is on duty forty weeks, including the entire growing and harvesting season. In winter he has twelve weeks leave of absence, of which four weeks may be devoted to rest and recreation, and of which eight weeks must be devoted to such programme of "professional improvement," as are approved from year to year by the board of education. This makes for a steadily improving force of teachers and supervisors. The agricultural specialist's services are partly those of an instructor in agriculture at the high school and partly those of a supervisor of school projects at the homes of the students. A class room is provided with special equipment for this branch of instruction.

Little importance is attached to land and farm work at a high school. Every possible emphasis is put upon carefully supervised projects in productive agriculture on the home farms of the pupils. Parents of pupils admitted to this training are required to allow the time and provide the land, tools, live stock, etc., necessary for the carrying out of these home farm projects. Live stock, equipment and operations are studied at thrifty farms in the vicinity. Now and then a high school or academy has land, an orchard, or a greenhouse; but these are not required in order to secure state aid.

The board of education has from the outset been strongly of the opinion that the dominant motive of an agricultural department in a high school should be vocational; and that such a department should be open for the study of the science and art of agriculture, both to regular high school pupils and to pupils who intend to be farmers, even though they may not be able to pursue successfully certain other branches of study completed by the school.

Special stress is laid upon "part time" work in agriculture, or "projects" whereby the pupil does at his own home productive farm work closely correlated with his instruction at the school and under the supervision of the teacher of agriculture.

It is felt that the farmer and his farm must constitute the fundamental factor in the practical training of the boy. In the use of the home time of the pupil a great deal of value in the agricultural course comes from the fullest possible participation of the boy in the ordinary routine of farm work as usually carried out by the parent; but the greatest benefit of the school can not be had without the use of a part of the boy's time, during the hours spent at home, for strictly school purposes. It is felt that in directing the boy in the discharge of his projects the school must of necessity undertake each year the supervision of a portion of his work at home.

Supervision of part time work in agriculture is not at all an attempt on the part of the school to interfere with the private management of the farms of the parents. Supervision is, nevertheless, a continuous effort by the school to assist, advise and encourage the student in applying under home conditions farm methods which have proved successful elsewhere and thus to cause the practical training of the student to result in vocational efficiency.

WISCONSIN.

In order to show what Wisconsin through its State University is doing in regard to agricultural education, the following extract from the Report of the Commission upon the Plans for the Extension of Industrial and Agricultural Training is herewith inserted:

"Agricultural instruction in the university began in 1876. At that time the four-year long course was organised. This course was based on the same entrance requirements as all other courses of the university. It included two years of work in liberal arts as a foundation to the technical work in agriculture which followed in the junior and senior years. This course, when organised, was ahead of the demands of the time, as but few students or parents realised the necessity for formal instruction of this type. The failure to reach the farm boy through the medium of the long course led in 1885 to the establishment of the so-called short course. No stringent entrance requirements were enacted. Taking the boy as he came from the country school, and with considerable experience already in farm practice, this course has been kept upon a practical basis and amounted to a continuation school, although not known under that name. The success attendant upon this educational experiment was not assured from the beginning, and it was only after the most persistent effort that the course began to grow in the estimation of the farmers of the state.

"In 1890 a similar type of practical work was started for the training of creamery and cheese factory operators. The discovery of the Babcock test and its application to factory dairying made possible the development of instruction in this line, and the dairy course of twelve weeks held in the winter has been crowded ever since its inception.

"The increase of students in the short course has now become so great as to tax the resources of the university. The grade of students attending this work has greatly improved within recent years and this work has exerted a more powerful effect on the state than any other line of agricultural educational work which has been done by the university. It is important to note in a recent census made of its graduates that 91 per cent. were engaged in some form of agricultural work, and that 80 per cent. were to be found on Wisconsin farms.

"The increased attention given to agriculture within the last decade has greatly stimulated interest in regular university work in agriculture, the graduates finding in practical, scientific and teaching work a wide, rapidly developing field for their efforts.

"In 1908, a two-year 'middle course' was organised with the same entrance qualifications as for the long course (four years of high school work), in which are given substantially the first two years of the long course with the substitution of more practical agricultural work for German and mathematics.

"With the several types of courses offered, the needs of practically all students are here considered. The short course takes the boy from the farm directly and on a country school foundation (or higher) gives him an opportunity to continue his training along vocational lines. The dairy course is essentially a trade school for the dairy factory operator. The middle course is designed for the high school graduate of the smaller town or rural high school who is unlikely to finish the four year course of university training, and who expects to return to a farm occupation. The long course offers the best training in the various phases of agricultural endeavour. While many of its graduates are returning to the farms as practical operators, managers or superintendents, others are going into experiment station work, college positions, teachers of agriculture in secondary and high schools and into agricultural journalism.

"These higher courses are already closely articulated with the public school system of the state. Doubtless with the introduction of agriculture in the high school curriculum, the relation of the college to the high school will become more intimate. The short course is not articulated at present with any portion of the secondary school system. Its work is most nearly allied to that of the county agricultural school, and in the evolution of agricultural training, it is entirely possible that the further development of these schools may diminish the necessity for continued emphasis of this line of instruction, although from present appearances, such a condition is not likely to obtain for some years to come. It would be easily possible to correlate a type of work that could be given in the short course so as to extend the work of the county agricultural school by an additional winter's work at the university, as has been previously recommended. Such a mode of procedure would be helpful in aiding these special schools of agriculture in the development of their work.

"The university has long recognised its obligation to the farmers of the state, and has for years given largely of its resources in time and energy to the upbuilding of the agriculture of the state. Long before the idea of field work had gained the ground which it now occupies as an integral part of the work of the agricultural college, many lines of activities were under way in which direct help was given to the person in need of such aid.

"Beginning with the organisation of the farmers' institutes movement in 1885, from one hundred to one hundred and twenty meetings have been held annually in the winter for one or two days, the circuit closing with a three-day convention known as the round-up institute. The talks and addresses here presented are incorporated in a farmers' institute bulletin of two hundred or more pages and distributed the following season in an edition of 50,000 to 60,000 copies. This work has been closely affiliated with the agricultural college.

"In 1908 the agricultural field work service of the college proper was organised, the work being divided into two general lines: (1) Demonstration field work of various kinds carried on during the summer conditions where the farmers can be brought in direct contact with the actual necessary operations and see just how they were carried out. (2) Lecture and demonstration courses held during the winter. These courses, known as *Farmers' Course* are held at the University, the county agricultural schools and other selected points. They range from five to ten days in length and consist of lectures, demonstrations and practical exercises given by a corps of ten to fifteen of the agricultural college staff. These meetings supplement the farmers' institute, covering a much wider field and emphasising the demonstrational features as much as possible. The close co-operation with the county agricultural schools has aided greatly in the development of this work. Through the medium of the local school, the work of the farmers' courses can be most effectively advertised, while at the same time the local school is always available as a centre of crystallising into effectiveness the practice recommended.

"A most valuable phase of field work has also been developed in the *Farmers' School,* which is a more intensive development of the farmers' idea. In this type of work the subjects considered are restricted to not more than two definite lines, as live stock, farm crops, soil problems, etc., and specific class room instruction for six hours daily is given, attendance upon the same being required by previous registration. The salient feature of this type of field effort is that it is sufficiently intensive to awaken positive effort to put proper methods in actual practice. It is a matter of much moment that these field efforts are exercised where possible through the medium of the agricultural school work. At present in the country schools, and it is to be hoped later in the high schools in which agriculture will be developed, this propaganda work can be best continued. This puts the local teaching agency in direct vital contact with the problems of the farm, thus vivifying the efforts of the instructor and creating a most wholesome relation between the school and the community.

"The field workers from the University come in personal contact with the people whose problems are pressing for solution, through the medium of the summer work and also in these winter courses, but the continuous presence of an active local agency to which they can look for help has been found to be of utmost service.

"Where such agencies (county agricultural schools or high schools with agricultural departments) do not already exist, it is possible to stimulate effort in this direction through the medium of an agricultural specialist who is an agent of the college located in a restricted area, say a county or a portion of a county. Such a method of itinerant instruction has been developed in the Province of Ontario, and also in Bavaria, Germany. Such resident specialists would be wholly comparable to the resident professors in general university extension who are permanently located in the industrial centres in which the field work is intensively organised. Such an organiser would serve as the local nucleus which in time might be the means of stimulating interest in agricultural education to the point of organising educational effort directly in the high school or the special county schools. When his work resulted in such fruitage he could be withdrawn and leave the further development to the local agency.

"It is our belief that this system should be tried in Wisconsin and its applicability to our conditions determined. The lines of activity capable of development through such an agency are manifold. As illustration of the possibilities, mention may be made of the single type of work, such as pushing the development of the young people's corn and grain growing contests. At present this work has been extended to about forty counties, the college working in co-operation with the county superintendent of schools. This year corn was sent to about 15,000 young people and about 6,000 samples were entered for competition at the various county fairs. Last year educational prizes were granted to one scholar in each contest, which consisted of paying the boy's expenses from his home to Madison and return to attend the special work given these young people at the University. The educational value of this work is already apparent, and there is no doubt but that a wide extension of this propaganda would go far in inciting a permanent interest of these boys in agricultural pursuits.

"The main problem in this system of specialists would be to secure men of proper training and experience, for men capable of covering general activities of this sort are the hardest to find of any class. The results already obtained in this work, although only organised a few years, attest the genuine interest that is roused in the minds of actual soil tillers. Not only is this a matter of great importance in itself, but the change which is thus produced in the mind of the parent exerts the strongest possible effect on his whole attitude toward education.

"In furtherance of the above plan your commission recommends the insertion of a clause in The Agricultural Field Service Bill which will permit the appointment of travelling teachers of agriculture."

AGRICULTURAL EDUCATION IN EUROPE.

The following reports submitted by Dean Rutherford of the College of Agriculture, are based upon his investigations made while in Europe.

AGRICULTURAL EDUCATION IN ENGLAND.

Formerly the board of agriculture and fisheries looked after all agricultural education, but by a recent arrangement and agreement between the board of education and the board of agriculture and fisheries, the board of agriculture assumes control over all higher agricultural education, such as is given by agricultural colleges either standing alone or affiliated with the different Universities. The board of education assumes the responsibility for a complete system of elementary and secondary education including nature study, gardening, elementary agriculture and home economy, as well as for giving training in such technical subjects as farriery, dairying, horticulture, beekeeping, stack building, and in many other common practices connected with tillage and the raising of crops and animals. In other words the board of agriculture holds itself responsible for the higher training of experts and for the extension of agricultural knowledge through research, while the board of education looks to the development of intelligence through the adaptation of the child's studies to his environment in the elementary schools, the giving of an agricultural bias to the elementary science course in secondary schools and to the spreading of information to adults through a carefully organised extension system.

It is assumed by those who have charge of these departments, and in fact by all who have the welfare of the country people at heart, that rural prosperity depends very largely upon the prosperity of rural industry, and that rural industry is dependent upon the intelligence, adaptability, knowledge and skill of those who are engaged in it, and who have the prime sources of wealth intrusted to them, namely: the care of the soil, the raising of crops and animals, the care and management of their by-products and the marketing of the same: that the people living in the rural districts have to depend for recreation very largely upon their own physical and mental resources, and that general culture gained from a liberal education will be the surest means of rendering rural life attractive; that in the natural course of events quite large numbers of the boys and girls eventually leave the rural districts and seek occupation in the towns and cities, and that the courses of study should be planned so as not to place these at a disadvantage when adapting themselves to new conditions.

Those in authority aim at the development of intelligence in the children rather than inducing them to work merely for the accumulation of knowledge. They are stimulated to apply the work of the school to the actual tasks of the rural districts. Since rural industry depends for its successful pursuit upon a large amount of expert knowledge on the part of those who are engaged in it, efforts are put forth in an endeavour to train the child's powers of observation by means of nature study, school gardening and handicraft, including wood working, paper folding, etc., for both boys and girls, and sewing for girls.

In 1887 a Commission was appointed to investigate agricultural matters. In the report of this Commission it was stated that agriculture was at a low ebb and that it was suffering from a lack of scientific knowledge that should be applied to the different operations on the farm. On the strength of this report Parliament voted in 1888 a sum amounting to about $25,000 for the purpose of strengthening the four scantily equipped agricultural colleges that existed at that time, namely, Cirencester, Downton, Aspatria and Hollesley Bay. In 1890 before any very tangible results could be noted from these grants, Parliament passed The Local Taxation (Custom and Excise) Act, which gave a large sum of money to be divided among the different counties of England and Wales, amounting now in the neighbourhood of $500,000 annually, for the purpose of furthering agricultural education; and without much thought being given to the matter there sprang up almost instantly in nearly every county an agricultural educational institution.

Owing to the lack of well trained men, it was a difficult matter to secure efficient staffs for all these institutions. They varied, too, in the character of the work which they undertook to do. In some counties they set out to give a general course in culture and agricultural education, while in others they assumed more the character of a farm school where perhaps only dairying, horticulture, beekeeping or poultry was taught. The encouragement granted at the beginning stimulated afterward the colleges to greater effort both in research work and in teaching. The number of colleges has increased to the extent that the board of agriculture is now paying grants to about twenty well equipped institutions. Cambridge and Oxford have organised agricultural courses leading to degrees. The board of education farms out its obligations to the counties. It stimulates, directs, superintends and pays grants, while the counties initiate and carry the projects into effect. The county has for this purpose an education committee and in some cases it has an agricultural subcommittee of the education committee. This latter plan is productive of much better results than where two separate committees exist, as all the work is co-ordinated in such a way as to prevent overlapping, waste of funds and friction.

Each county has working under its committee an agricultural staff. At the head of each staff is an organiser. He must, first of all, have organising capacity. He must be well grounded in the sciences and must know their relation to agriculture. He must be well informed as to local as well as general agricultural conditions and he must have a knowledge of the educational needs of the community he is supposed to serve. He has under him a staff of experts consisting of a dairyman, horticulturist, agriculturist, veterinarian and in many cases a poultryman and beekeeper. These are usually employed throughout the year. At other times specialists are engaged temporarily. This staff is furnished with offices, library, meeting rooms and laboratories. In some instances they have a piece of land attached in order that experiments in tillage, manuring, gardening and the like, suited to the local needs, may be carried out. These experts travel about and give information on farming to the people who need it. They organise meetings, hold short courses for adults and for teachers in elementary and secondary schools and encourage school gardening. Itinerant instruction is given at the schools by the experts of the institute staff. This organisation is usually called an agricultural institute.

THE ELEMENTARY SCHOOLS.

The courses of study in the elementary schools are gradually being changed for the better. Nature study, school gardening and a little handicraft are being introduced. The children are encouraged to make observations and to record these observations in a systematic way. The weather, animals, birds, insects, plants, streams, hills and the people of the locality are all objects for their study. The successful teaching of these studies depends almost wholly upon the teacher, who is allowed a very great deal of freedom in developing the courses. In fact, it is only by suggestion and encouragement that the teachers are stimulated to undertake these most interesting and helpful studies. When once the work has been undertaken and carried on successfully by one teacher, the desire to engage in it spreads very rapidly over a country.

In 1903, Staffordshire had only three school gardens; in 1911 it had 171. In 1903 there were 5,500 pupils getting instruction in school gardening and in 1911 there were 24,000 pupils. In many cases the teachers have taken up poultry work, beekeeping or kitchen gardening on the school grounds, which vary in size up to half an acre. The agricultural institutes and farm schools usually furnish the elementary schools with a start in poultry and bees.

The children leave the schools at the age of thirteen to fourteen. While many drop out at this age and engage in some service, there are still quite a number who go on to the secondary schools. These schools offer board courses enabling students who pursue them to obtain a good liberal education, but the science teaching is undergoing a change. The reason for this is that it is desired to make the course attractive and at the same time helpful to the young people of the country who afterwards will make their homes there. The biology is given an agricultural bias; chemistry, while it must be taught well, is at the same time given an agricultural bias; and the physics is taught in such a way that the pupil in the secondary school can make direct connection between the experiments carried on with capillary tubes and the operation of rolling the land. It takes about four years of four hours of science a week to complete the course in the secondary schools and the work here is planned to lead up to the work in the agricultural colleges. If the young men enter other professions where their science is needed they are in no way handicapped. The teachers who go through these schools get direct preparation for the work they will be called upon to teach in the elementary schools.

RURAL EVENING SCHOOLS.

It happens that there are many boys and girls who drop out of the elementary schools and who do not go to on the secondary schools For these evening schools have been provided in which courses are given to help them to prepare themselves better for their work later in life. About an hour each evening is given to the study of English and an hour and a half or thereabouts to the study of technical subjects. This includes agriculture, shop work and drawing for boys and cooking and sewing for the girls.

FARM SCHOOLS.

In a number of the counties farm schools have been organised. The instruction given is of an elementary character and includes English and such technical subjects as dairying, beekeeping, farriery and the like. These schools have a class room, laboratory, poultry plant and sometimes live stock. The purpose of these schools is to impart an elementary knowledge of agriculture to young men who do not wish to gain such knowledge by apprenticing themselves to farmers. The schools accommodate about twenty-five pupils. The courses run successively so that they may be kept going the year round.

AGRICULTURAL SCHOLARSHIPS.

The county officers look upon the work of the institutes very favourably. This is shown by the financial assistance provided, by the reliance which they put upon the advice of the experts and the careful attention given to the advice offered by these experts. They regard them now as absolutely necessary to the agricultural welfare of the county and in order to maintain a sufficient number of efficient men for this work, the counties provide scholarships sufficient to encourage bright, energetic young men to take courses in the agricultural colleges at the universities. They regard the money applied to this purpose wisely expended. The colleges in turn are able to furnish a larger number of men better qualified to man the agricultural institute staffs. In addition they are furnishing teachers much better qualified to give the sciences in the secondary schools an agricultural bias.

Each county has its training school for teachers. These teachers are in large part pupils who have gone through the elementary and secondary schools. The success of the work in the elementary and secondary schools is dependent wholly upon the attitude of the teacher towards it. The training schools devote their time and attention to general training. Nature study, school gardening, cooking and sewing get very little attention, if any. In order that the teachers may get this training the county provides through its institute staff classes on Saturdays and short courses of two weeks' duration in summer at a college or farm school. Itinerant instructors visit the schools and give instruction in gardening and nature study.

AGRICULTURAL EDUCATION IN SCOTLAND.

In Scotland as elsewhere nature study, gardening and allied studies for the children in the elementary schools are considered of great importance and especially to those living in the rural districts; and here, too, the teacher is the one who must be depended upon to initiate and carry on the work successfully with the children. To this end emphasis is laid upon the preparation of the teachers. It has been arranged that while they are taking their professional training at the training schools in Edinburgh and Aberdeen they shall get at the same time training and practice in the work of school gardening. The work of giving this has been intrusted to the colleges of agriculture at these two places. In Edinburgh just on the outskirts of the city the college has leased for a term of years a piece of land three acres in extent. It is conveniently located at the end of a street car line. The grounds are well fenced. A small brick building with class room, laboratory, potting room and greenhouses has been erected at the cost of about $5,000. Flowers, fruits and vegetables are sown and cultivated by the teachers. Part of the ground is devoted to cereals where both the teachers in training and the men from the University study not only varieties but also the results of breeding experiments. District representatives—the agricultural organisers—are located in nine or ten counties in the immediate neighbourhood of the East of Scotland Agricultural College. These men encourage the teachers and assist in the work of starting school gardens.

At the North of Scotland Agricultural College, located at Aberdeen, there is a similar arrangement. In each district where a representative is stationed a model school garden has been established with a view to creating an interest in the work of school gardening and setting an example for other teachers to follow.

AGRICULTURAL EDUCATION IN FRANCE.

Elementary.

For administration purposes France is divided into departments or provinces, a number of which joined together make an academy, counties and communes. All schools, whether private or public, are subject to inspection by officials connected with the Department of Education. The highest officers under the head of the Department are called general inspectors. Twelve of these appointed by the president have general charge of all primary school work. Next to these are the rectors (one for each academy). They are appointed by the president. The rector has charge of all higher, secondary and primary education in the academy to which he has been assigned. The academy inspector is appointed by the Minister. He is an assistant to the rector, and has for his special charge all primary education within the academy. The primary inspector is responsible for all primary schools in the county to which he has been appointed. Among his duties are the putting into effect of all laws respecting education, chief of which are those relating to compulsory attendance at school, school equipment, methods of teaching, etc. The average inspector has upwards of two hundred and thirty schools to look after. The primary inspectors get their appointments by means of competitive examinations. They work up from the ranks of the teaching profession. They are usually chosen from the staffs of the normal schools.

The elementary schools are graded to suit the ages and needs of the pupils, and where a village has more than five hundred people living in it, it is compelled to provide separate schools for boys and girls. The teachers in the primary schools are divided into two classes: the probationers and the regular certificated teachers. The probationer must spend two years teaching and then pass an examination and be recommended by the inspector before he can become a certificated teacher. Each department or province in France was compelled some years ago to build and equip a normal school for the purpose of preparing its own teachers. This imposed a big financial burden on the departments and at the same time made it almost impossible for them to obtain suitable teachers for these newly created schools, of which there were about ninety. It became necessary for the government to build and equip two higher normal schools for the purpose of furnishing teachers to the departmental normal schools. These two schools are situated at St. Cloud and Fontenay aux Roses.

All the teachers in the elementary schools in France are on the civil service list. Their salaries are paid from the national treasury. This system was put in vogue because it was found that poor communes or sections were unable to pay for the services of a good teacher, while the richer ones were able to get the best teachers and retain their services. The State saw that this system was not in the best interests of all the people, so it assumed the responsibility of paying the salaries, and in order to work no injustice to experience, the teachers were graded according to length of service and the salaries graded according as the teacher is employed in the cities and towns or in the country. This was done because of the difference in living expenses.

It was my good fortune to have the privilege of a long interview with M. Rene Le Blanc, a retired general inspector, who was the son of a French peasant and had worked himself through the schools as pupil, teacher, primary inspector, academy inspector and rector, to that of general inspector, which he held until he retired on pension. He discussed in the freest manner the workings of the whole elementary system, which appears to one as cumbersome, mechanical and likely to militate against the development of individuality and initiative on the part of both the teacher and the pupil.

In France as well as in other European countries there has been and is now, a great tendency for the young people, both boys and girls, to leave the farms and seek employment in the cities and towns. Not only is this true of boys and girls, but also of the parents, and so steps have been taken to make agriculture more attractive to the people in the country districts. To this end agriculture, manual training and home economics have been introduced into the courses of study of the elementary schools, especially those of the rural districts. While the teachers of the elementary schools have had a certain amount of agriculture taught them in the normal schools, it has been given in such a way that they are not able to make the best use of it in teaching the pupils under their care. The teachers seem to be lacking in viewpoint, and consequently are unable to put life and spirit into the teaching of this subject. The pupils learn about grasses and other plants that have no relation to their districts. They are able to make drawings of ploughs and parts of ploughs without knowing how or when the implement should be used. Where the teacher enters into the teaching of the subject in a whole-hearted manner the teaching is a success. The Government endeavours to encourage the teachers in this work by offering prizes to the pupils and prizes also to the teachers whose pupils succeed in garden competitions and the like. As a further stimulus to the work, itinerant agricultural instructors assist the teachers; in fact, part of their duty is to help introduce agriculture into the rural schools. In many cases the teachers in the rural sections in France have houses with gardens attached to the school, and the teacher finds it profitable to encourage the children in gardening, especially as he is able to keep his vegetables well tilled and free from weeds by means of their help.

The agriculture taught in the elementary schools has been of too formal a nature, especially in the lower grades In the higher grades agriculture and horticulture are taught to the boys; cooking and sewing to the girls. In the higher normal schools at St. Cloud and Fontenay aux Roses no agriculture is taught. At the departmental normal schools agriculture is taught by means of agricultural experts.

In France it has been noted that large numbers of children drop out of school at the ages of eleven to thirteen or about the end of the elementary school course. The authorities realised that the efficiency of the people generally was not as great as it should be. It was planned that schools should be instituted that would provide attractive courses for these students who would otherwise never go on to any higher school. A course of about a year's duration was added to the primary school. The general education was continued and with it some practical subjects, such as wood and iron work, were added, sufficient to familiarise the boys with tools. In addition to this, schools were organised providing courses that would last for two or three years. During the whole course there is much of the general cultural subjects. At the beginning there is little of the practical subjects, but in the last year the course is fairly full of manual training exercises with a strong leaning to the practical. These schools take the place in large part of the apprenticeship system. The schools are organised only where they are asked for by the people. In fact, the school is an expression of public sentiment as regards the educational requirements of the district. The teachers are paid, as in other cases, by the government. Other expenses are defrayed by the local community.

Still another set of higher schools was provided for. These schools are called the higher primary schools. The Act setting forth their scope makes provision for four courses, namely: general, commercial, industrial and agricultural. The general course is taken by all. The authorities in charge of the school decide as to which of the other courses will be given. In the cities and towns the commercial and industrial courses are associated with the general, while the school with a rural setting puts on a good course in agriculture. The teachers in these schools are such as are qualified for departmental normal school staffs. The teachers who give the special work in agriculture or the industries often have charge of the same work in a number of schools; that is, they are in a way itinerant instructors. The government authorises the establishment of these schools and agrees to pay salaries, provided the community guarantees to pay the other expenses for a term of at least thirty years. They must guarantee to the government that there will be at least fifteen pupils attending yearly.

OTHER PROVISIONS FOR AGRICULTURAL INSTRUCTION.

The Farm School.

The farm school is located on an ordinary farm. The tenant of the farm is the director. He has under him a farm superintendent who keeps the books and performs other services, a gardener, blacksmith and sometimes other instructors. The director has to make the farm pay. As a result of this the buildings are poor, the stock usually not well selected and the equipment not what it should be. Neither is the instruction of a very high order. These schools are intended to provide a place where the sons of farm labourers may be taught agriculture. At one time there were some seventy of these schools in France but there are now only about seven. They are not likely to bring about any great improvement in the agriculture of France, nor are they likely even to create an interest in the boys who attend them in agricultural pursuits.

Schools of Practical Agriculture.

The purpose of these schools is to afford places in which the sons of peasants and small farmers can get a good general education as well as instruction in the theory of agriculture, together with practice in doing the common tasks of the farm. There are about forty of this type. They attract fairly large numbers of young men from the ages of fifteen to eighteen. The course lasts for three years. The young men who continue for the full time and complete the course do not go back to the farms in large numbers but take inferior positions under the government, or go on to the agricultural colleges and qualify for the higher positions that are open to well trained experts either in colleges or in government work.

District Representative.

The district representative, or itinerant instructor, is used to good advantage in France for carrying information to adults and inducing them to adopt better methods on their farms; and in interesting the elementary teachers in the matter of school gardening and showing them how to conduct their classes so as to get the best results.

BELGIUM.

Elementary Education.

In Belgium there is a somewhat similar provision made for the teaching of agriculture in the elementary schools. The work seems to be done more thoroughly than in France. Then there are special schools to take care of the boys and girls who have completed the elementary school course but who do not intend to go on to the secondary schools. Among these are schools of horticulture fully equipped with greenhouses, gardens, etc., providing a course covering the growing of vegetables, fruits, flowers and forests. There are schools for girls, provided with lodging accommodations and with equipment, class rooms, laboratories for giving instruction in household economics, dairying and poultry. There are higher schools in which a general cultural course is given, together with instruction in agriculture and allied branches of study. All these lead up to the agricultural colleges where the experts are trained to engage in the work of improving agricultural conditions in Belgium.

The District Representative.

In each commune or small local division there is an agricultural expert located. It is claimed that these experts have simply revolutionised agriculture in Belgium. Within twenty-five years they have increased the agricultural output by £10,000,000, and the acre in Belgium produces twice as much as the acre in Great Britain. At first the district representative was not very welcome, but as time went on he was able to interest the farmers in the matter of improving their stock, crops and methods of work to such an extent that they came to rely on him as a necessary advisor. Then they begin to co-operate with him, and now he conducts winter short courses in practically every village in the commune. In order to do the large amount of work that has fallen to him, he engages experts in each of the different lines, namely: dairying, gardening, sanitation and hygiene, veterinary science, elementary rural economics, poultry and in household economics. Part of the responsibility in looking after these courses rests upon the local authorities who are supposed to ask the district organiser to conduct winter short courses for them, and he in turn furnishes the staff and looks after the conduct of the course.

Women's Institutes.

The wives and daughters of the farmers have organised themselves into what are called women's institutes. The members of the local organisations meet periodically to discuss questions vital to the interests of the women folk who live on the farm. The questions discussed are as broad and varied as are the activities of farm women, and have to do with all the matters that affect the welfare of the country people. The women's institutes in Belgium correspond to the homemakers' clubs of Saskatchewan, and while they had a small beginning but a short time ago, their membership now numbers up in the thousands.

Other Types of Schools.

Mr. R. B. Greig, one of the members of the Scottish Board of Agriculture, has furnished the following description of two type schools, one in Svalof, Southern Sweden, the other in Ballarat, Victoria, Australia.

SWEDEN.

Svalof High School and Winter School.

The buildings are near the little village of Svalof in Southern Sweden, and they include two large lecture halls with library and cloak rooms, and a large and fine gymnasium with modern equipment. In a separate building are the living rooms of the students, the masters' and matron's apartments and the dining rooms. There are twenty bedrooms with accommodation for two students in each room.

The programme of the school includes:

1. A winter term for young men from November to April, consisting of a high school and an agricultural college department.

2. A summer term for young women from May to July consisting of a high school and a household training department.

High School Department—Winter Term for Men Only.

The object of this department is to give general instruction in ordinary school subjects somewhat on the lines of the Danish high schools. Among other subjects, chemistry and natural history are taught as well as bookkeeping and surveying and the students get daily practice in the gymnasium. There is no entrance or exit examination, but pupils must be at least eighteen years old.

Agricultural Department—Winter Term for Men Only.

The object of this department is to give general agricultural knowledge, chiefly theoretical. Secondary instruction is given in grammar, history, geography, methods of local administration, arithmetic and hygiene; the principal training is in chemistry, botany, zoology, agriculture, veterinary hygiene, dairy work, forestry, gardening, farm management, surveying and, lastly, riding. Milk testing for the training of milk control officers is dealt with fully. In addition instruction is given daily, jointly with the high school, in singing and gymnastics.

There is no farm attached to the school, but those who finish the term and pass on examination, if they wish for practical training, are placed as paid assistants on a farm from April to October, and on this farm they receive instruction from the owner of the property who works in co-operation with the school. There are also one or two scholarships of about two hundred and fifty-one dollars each, which enable recipients to go elsewhere for further information or to increase their knowledge by travelling.

The students of the agricultural department must be nineteen years of age, and need not undergo an entrance examination if they have passed out of a state supported high school or any similar institution. For those who have no such qualification, the chief subjects of the entrance examination are elementary geometry and surveying, elementary science, and the principles of bookkeeping. The fees are small and in some cases are not exacted. Lodging seems to be free or included in the tuition fees, but a charge is made for board, about one shilling per day.

High School Department, Summer Term, for Women Only.

The work of this department for girls in the summer is the same as for men in the winter, except that the term is shorter; the science teaching and bookkeeping are modified towards household management, hygiene is prominent and sewing is taught. There is no entrance or exit examination but students must be over sixteen and under twenty years of age.

Household Department, Summer Term, for Women Only.

The object of this branch is to train girls to become careful and efficient home managers, and the scheme is worked on the same lines as that of the winter agricultural school for men. There is this important difference, however that the girls taking the course of the household department must be at least eighteen years of age, must have been employed in house work and passed through the high school. The programme of instruction includes elementary chemistry and natural history, with special reference to the home; methods of food preparation, cooking, home hygiene, the purchase of household supplies and furniture, bookkeeping, arithmetic, gardening and poultry keeping. The term concludes with a public examination and the issuing of certificates to those students who satisfy the examiners. The state gives scholarships to those of small means, and, for the rest, the fees are slightly less than those for the men.

This school is in the midst of an agricultural area which is as well farmed as any area in England or Scotland. It adjoins the world famous Swedish seed station, which is presided over by Dr. Nilsson, and it is within a mile of what is probably the best managed farm in Sweden, so that it has almost every external advantage.

SUMMARY OF STATE LEGISLATION ON AGRICULTURAL EDUCATION.

In order to show the interest taken in agricultural education in the United States, a brief outline of recent state legislation is herewith given:

Wisconsin.—An Act passed in 1911 makes available to each school maintaining a department of manual training, or domestic economy or agriculture, or any or all of these departments one-half the amount actually expended for instruction in such department, not, however, to exceed $350 for each department above named which shall have been maintained in connection with the high school and the three upper grades below the high school, but not to exceed $250 for each department named maintained only in connection with the high school. It is possible under this Act for a school district maintaining courses in these three subjects to receive $1,050 per year from the state. No state aid may be given to any school for instruction in agriculture, domestic economy, manual training, or industrial branches unless the salary of every teacher giving instruction in such subjects shall be at least $60 per month.

Minnesota.—Three important laws relating to teaching of agriculture and industrial work were passed by the Legislature of 1911:

1. The Putnam Act, providing for state aid of $2,500 annually to high schools maintaining agricultural and industrial education so as to authorise rural schools to become associated with such state-aided high schools. The purpose of this amendment is to provide "training and instruction in such agricultural and industrial departments for pupils in rural schools, and to extend the supervision and influence of state high or graded schools to rural schools, one or more schools may become associated with a high or graded school in which is maintained an agricultural and industrial department as herein provided." Each high school entitled to receive state aid of $2,500 per year may receive, in addition, $150 per year for each associated school district, and each school district forming such an association may receive $50 per year. Each of thirty high schools received during 1911-12 $2,500 of state aid. A number of these will receive additional state aid through their association with school districts as provided for in The Putnam Act.

2. "Any high school or graded school which shall maintain such a course as the high school board of this state shall prescribe in agriculture and either in home economics or in manual training shall receive annually in addition to other aid the sum of $1,000 for maintaining such industrial courses, to be appropriated and paid from the appropriation made for state aid to high and graded schools." About sixty high schools received the benefits of this law during the school year 1911-12.

3. Encouragement for consolidation of rural schools is extended by the state through The Holmberg Act. Schools are classified as A, B and C; schools of class A to have at least four departments; those of class B, three departments; those of class C, two departments. Each school of class A receives $1,500; of class B, $1,000; of class C, $750. The principal of each school in any of these classes must be qualified "to teach the elements of agriculture as determined by the state superintendent of public instruction."

New York.—In 1910 the state made provision for state aid to high schools giving instruction in agriculture. The sum of $500 may be apportioned to any city or union free school district maintaining a school of agriculture, mechanic arts and homemaking for thirty-eight weeks in a year, subject to approval of the state commissioner of education. Twenty schools have definitely adopted the special agricultural course for the year 1911-12, and will receive state aid. In the law of 1910 relating to agricultural education provision is also made for the training of teachers of agriculture for high schools at certain state schools of agriculture.

California.—High school boards may prescribe an additional course, or additional courses of study, "including instruction in manual training, domestic science and art, agriculture, horticulture and dairying, to be duly credited as part of such high school work." The state office of education is especially active in promoting agricultural education, co-operating with the college of agriculture of the state university.

Ohio.—An Act to provide for the teaching of agriculture in the common schools became law in 1911, but does not apply to city school districts of the state. The Act requires, "that the state be divided into four agricultural districts to be mapped out, located and defined by the commissioner of common schools. * * * The state commissioner shall also superintend all such agricultural education designated in this Act, and shall appoint in each agricultural district a person known as district supervisor of agriculture." Among the duties of this officer are visiting and co-operating with the several boards of education in his district in planning such a course of study in agriculture as they may think best adapted to the needs of the people of the respective school districts; visiting the county teachers' institute in every county in his district, and giving instruction in agriculture to the teachers of the several schools designated in this Act; co-operating with the board of agriculture, and giving the state such time as may be necessary to lecture on agricultural subjects as are related to teaching in the common schools; encouraging county agricultural societies in each county of his district to establish school children's agricultural exhibits at each annual county fair. The sections of the political code relating to teachers' examinations is amended so as to include "on and after September 1, 1912, elementary agriculture."

North Dakota.—Three important measures in the interest of agricultural education became law in 1911. Agriculture is made one of the four optional subjects in examinations for first grade teachers' certificates. This will probably be amended later, making agriculture one of the required subjects. State aid is to be given to rural and graded schools. These are of two classes, but among the requirements for both classes are courses in domestic science, manual training and elementary agriculture. Provision is made for the establishment of county agricultural and training schools. "Each of said schools shall receive state aid in the sum of $2,500. * * * Not more than five schools shall be aided the first year, nor more than five be added every two years thereafter." A state agricultural and training board is also created. This board "shall consist of the president of the state agricultural college, the state superintendent of public instruction, and three practical farmers who shall be appointed by the governor of the state."

Iowa.—An Act of the last Legislature provides for the establishment of departments for training of teachers in agriculture and home economics in forty high schools, and appropriates $500 special state aid for each of these schools.

Idaho.—Rural high schools are established with agricultural instruction as part of the course of study. The subject of agriculture is put on the list of subjects required for examination for county certificates for teaching.

TYPICAL AGRICULTURAL HIGH SCHOOLS.

SMITH'S AGRICULTURAL SCHOOL AND NORTHAMPTON SCHOOL OF INDUSTRIES.

The Smith's Agricultural School and Northampton School of Industries is an independent vocational school established by the city of Northampton in 1908.

Before plans were made for starting the school, the co-operation of the state was sought under legislation providing state aid for local communities desirous of establishing independent industrial schools.

The immediate management of the school is in the hands of a board of three trustees who are annually elected by the voters of Northampton. On this board must be one practical farmer and one practical mechanic. The State of Massachusetts subsidises the school to the extent of one-half of the running expenses. Consequently, the school is subject to the inspection and supervision of the agents of the State Board of Education. The state supervision is of a thorough-going and detailed sort. All members of the faculty must be approved by the state board. The course of study and the methods of conducting the work are likewise subject to state approval.

State-aided vocational schools in Massachusetts have advisory committees appointed from local trades, industries and occupations. The duty of these advisors is to consult with the trustees and those in control regarding the management of the school.

The purpose of the school is to teach young people between the ages of fourteen and twenty-five to be intelligent and skilful workers. It is a work-school, aiming to teach those who come to it the best ways of doing things through actual daily work. The special departments include agriculture, household arts and mechanic arts.

In order to accomplish this end each student makes a study of that portion of science, mathematics, drawing and current practices that directly bear on the work that he is performing. There is no attempt to teach a great variety of academic subjects. The one purpose is to teach the right and intelligent doing of certain long established kinds of work, of which the community is in need and for which the student shows a fitness.

Its educational purpose is defined as an education the controlling purpose of which is to fit its pupils for profitable employment. Students who enter the Girls' School of Industries do so for the purpose of fitting themselves for "the occupations connected with the household." Cooking is arranged for families and sold at cost to the students. Those who enter the School of Agriculture propose to fit themselves for the "occupation of tilling the soil, care of domestic animals, forestry, and other wage earning or productive work on the farm." Those who enter the boys' school of industries do so to fit themselves for the wood working trades and machinist trade.

The Boys' School of Industries has the past year been carrying on a half-time scheme with the Norwood Engineering Company. The boy spends every other week in shop. The week at the school is spent in reviewing the work done in the machine shop and working out the mathematics, science and drawing that applies.

In addition to the industrial work, every student carries on the study of citizenship, the history of his occupation and selected chapters of general history.

Each student is trained throughout his entire course in both oral and written English. The subjects for the English training are to a very considerable extent obtained from the industrial work of the student and from his study of citizenship and the history of his occupation.

The institution has three affiliated schools, school of agriculture, girls' school of occupations and boys' school of trades. These divisions as schools bear the following titles: School of Agriculture, Girls' School of Industries and Boys' School of Industries.

The industrial work of each department is in the hands of trained and competent workmen. In all cases these workmen are taken from active life rather than from the teaching profession. In addition to the expert workmen found in the industrial work, experienced teachers have charge of the students in their nonindustrial work of English, history, citizenship, science, etc.

The school is available to any boy or girl between the ages of fourteen and twenty-five. No educational qualifications are demanded. It was stated by the principal that the best students are those whose academic standing is best by reason of the fact that they are more mature. Boys and girls who have not completed the seventh grade find the work exacting. They are not, however, excluded from the school until they demonstrate their inability to do the work. No student is allowed to remain in the school who does not come for the purpose of learning a trade or mastering an occupation, or who does not show sufficient ability to master the requirements of the industrial part of his work. Furthermore, no student will be allowed to remain in the school who is indolent, or incorrigible, or who does not obey the simple regulations found necessary to properly administer the school. The institution is for any boy or girl at least fourteen years old who does not for one reason or other intend to continue in the regular public schools, and who wants to fit himself or herself for earning a living in an occupation or trade.

Whenever it does not interefere with the work of the regular students, special students are allowed to avail themselves of the advantages of the school. In case of marked proficiency in special work, a certificate will be granted the student.

A special feature of the institution is the "arena" which attracts much attention from all visitors at the institution.

The courses of study for the different schools are as follows:

SCHOOL OF AGRICULTURE.

First Year

Fall	Winter	Spring	
Poultry and Gardening (6) 2	Farm Shop (6) 2	Gardening and Poultry (6) 2 Farm Shop (3) 1	Practical projects: may continue through summer.
English 2 Farm Arithmetic 4	Farm Journal Reading 4 English 2	English 2	Studies related to projects.
Elements of Agriculture (4) 2 Freehand Drawing 4	Elements of Agriculture (6) 2 Industrial Geography 4	Elements of Agriculture (4) 2 Industrial Geography 4	General vocational studies.
English 2	English 3	English 1	Cultural studies.

Second Year

Fruits (6) 2 Farm Repair Shop (6) 2	Physics of Farm Machines (3) 2 Farm Repair Shop (6) 2	Fruits (6) 3 Farm Repair Shop (6) 2	Practical projects; may continue through summer.
English 1 Farm Accounts 3	English 1	English 1	Studies related to projects.
Farm Bacteriology (2) 2	Farm Drawing 2 Farm Chemistry (6) 2	Farm and House Sanitation 4 Farm Chemistry (3) 1	General vocational studies.
Historical Epochs 2 English 2	Historical Epochs 2 English 2	Historical Epochs 2 English 2	Cultural studies.

Third Year

Farm Crops (7) 2 Farm cons. in Wood and Cement (4) 2	Farm Blacksmithing (5) 1 Farm Repair Shop (3)	Farm Crops (4) 2 Wood Work and Blacksmithing (3) 1	Practical projects: may continue through summer.
Conference English	Conference English	Conference English	Studies related to projects.
Breeds (4) 2 Rural Conditions and Progress 4	Animal Diseases and Physiology 4 Rural Conditions and Progress 5	Dairying (5) 1 Farm Management 4	General vocational studies.
Citizenship 5	Citizenship and Public Speaking 6	Citizenship and Public Speaking 4	Cultural studies.

Figures refer to periods per week; figures in brackets refer to periods given to laboratory and industrial work.

GIRL'S SCHOOL OF INDUSTRIES

First Year

Fall	Winter	Spring	
Plain Sewing (7) 1 Cooking (5) 1	Plain Sewing (7) 1 Cooking (5) 1	Plain Sewing, Millinery (5) 1 Cooking (7) 1	Sewing room and kitchen practice.
English 2	English 2	English 2	Studies related to practice work.
Freehand Drawing 4	Industrial Geography 5 Freehand Drawing 4	Industrial Geography 4	General vocational studies.
English 2 Personal Hygiene 2	English 3	English 3 Flower Gardening (4) 1	Cultural Studies.
Flower Gardening (2) 1			

SECOND YEAR

FALL	WINTER	SPRING	
Dressmaking and Millinery (7) 1 Cooking and Preserving (7) 1	Dressmaking and Embroidery (7) 1 Cooking (7) 1	Dressmaking and Millinery (8) 1 Cooking (5) 1	Sewing and kitchen practice.
Household Bacteriology (2) 1 English 1	English 2	English 1	Studies related to practice work.
	Household Science (3) 1	Household Science (3) 1	General vocational studies.
English 2 Historical Epochs 2 Handicraft (3) 1	English 2 Historical Epochs 2 Handicraft (3) 1	English 2 Historical Epochs 2 Handicraft (3) 1	Cultural studies.

THIRD YEAR

Dressmaking [illegible] (7) 1 School Lunch and Table Service (8) 1	Dressmaking (7) 1 School Lunch and Table Service (5) 1	Dressmaking (11) 1	Sewing room and kitchen practice.
	Textiles 2	Food Values 4	Studies related to practice.
House Planning and Decoration 3	Household Planning and Decoration 3 Nursing and Emergencies 4	Household Planning and Decoration 3 Nursing and Emergencies 4	General vocational studies.
Citizenship and Local History 4 Conference English	Citizenship and Local History 4 Conference English	Citizenship 3 Conference English	Cultural studies.

BOYS' SCHOOL OF INDUSTRIES

Two Week Programme

FIRST YEAR

FALL AND WINTER	SPRING	
Shop Practice (45)	Shop Practice (45)	Shop experience.
Shop Arithmetic 5 Mechanical Drawing 4 Study of Material 3 English 2	Solution of Formulas 5 Mechanical Drawing 4 Study of Material 3 English 2	Studies based on shop work.
Industrial Geography 4 Freehand Drawing 2	Industrial Geography 4 Freehand Drawing 2	General vocational studies.
English 3	English 3	Cultural studies.

SECOND YEAR

Shop Practice (45) Shop Visits 4	Shop Practice (45)	Shop experience.
Shop Mathematics 5 Mechanical Drawing 4 Shop Reports 2 English 2	Shop Mathematics 5 Mechanical Drawing 4 English 2	Studies based on shop work.
Shop Science 5 Personal Accounts 4	Shop Science 5	General vocational studies.
Industrial History 3 English 3	Industrial History 3 English 3	Cultural studies.

THIRD YEAR

Shop Practice (45)	Shop Practice (45)	Shop experience.
Mechanical Drawing 4	Mechanical Drawing 4	Studies based on shop work.
Strength of Material 4 Trade Journal Reading 5	Shop Problems 3 Trade Journal Reading 5 Chemistry of Materials 5	General vocational studies.
Hygiene and Sanitation 4 Citizenship and Public Speaking 5	Citizenship and Public Speaking 5	Cultural studies.

GARDENA HIGH SCHOOL.

The Los Angeles high school system is one of the most progressive in the Western States. Its high schools make a more practical attempt than many others to fit children for the activities of life. It has a number of high schools offering a great choice of courses as a preparation for business, the industries and domestic life as well as those preliminary to University training. Not all of these are attempted in any one school, but to each school is given the task of specialising upon *one* phase of school work.

One of these, the Gardena High School, situated a few miles from Los Angeles, makes provision for all the general scholastic courses but specialises in the subject of agriculture. The other high schools have courses in agriculture, but none lays the same stress upon it as does the Gardena High School. This high school has a farm of fourteen acres, which is used largely for experimental purposes. Two and one-half acres of this land is in "trial gardens," used as their names indicate to "try out" all sorts of semi-tropical and tropical vegetables and fruits just far enough to bring them to maturity with a view to seeing whether they will do well in that vicinity.

To a certain extent it is an experiment station for this school and for this region. Many of the things they are growing there the students have never seen. It is an education for them. There is also a trial vineyard, where they are experimenting with various grape vines to ascertain which are the best in quality and which the most profitable. They have also a trial orchard for three fruits, and plats of alfalfa.

In the seventh and eighth grades the work does not differ much from the ordinary training work in the village or city schools, but in the high school it is real farm mechanics and is constructive in character. The necessary shop work consists largely in making models of fences, gates, barn frames and other things that are used upon the farm. There is always plenty to do of a practical and substantial character around the school and along the lines of construction work. For example, the pupils put up potting sheds at the greenhouse and lath houses to shade the citrus seedlings. They make concrete tile and put in their irrigating system. They put up fences and in fact do anything and everything connected with the work on the farm. The pupils have lately constructed a house for a gas plant connected with the school. The school board that has charge of this school made an appropriation for a barn to shelter their horses and store their forage. This barn is not to be put up by contract, but the board will furnish carpenters, one carpenter to each squad of four or five boys, so that these boys who are taking the agricultural courses will actually put up a farm barn under expert supervision.

All kinds of vegetables are grown by the students in their little allotments and they conduct experiments in grafting and propagation. Landscape gardening and elementary forestry are also taught. The domestic science articulates closely with vegetable growing, the chemistry with both domestic science and agriculture, and the manual training with actual farming operations. The course of study of this high school is as follows:

GARDENA AGRICULTURAL INTERMEDIATE SCHOOL AND THE GARDENA AGRICULTURAL HIGH SCHOOL.

YEAR	AGRICULTURE	HOME ECONOMICS	LITERARY	GENERAL	ELECTIVE
7	English 3 Spelling and Writing 2 Arithmetic 5 Elementary Science and Geography 2 Sloyd and Drawing 6 Gardening. Music.	English 3 Spelling and Writing 2 Arithmetic 5 Elementary Science and Geography 2 Sewing, Cooking, Drawing, Gardening. Music.	English 5 Spelling and Writing 2 Arithmetic 5 Elementary Science and Geography 2 Foreign Language 5 Sloyd or Cooking and Drawing 2 Music.	English 3 Spelling and Writing 2 Arithmetic 5 Elementary Science and Geography 2 Sloyd or Cooking, Sewing, Drawing 6 Elective 2 to 5 Music.	All students in this grade are expected to take English, arithmetic, spelling, elementary science and geography, writing, sloyd or cooking and sewing, drawing and music. Elective subjects in this course include gardening, German, Spanish, Latin and typewriting.
8	English 5 United States History 5 Elementary Agriculture 10 Sloyd and Drawing 10 Music.	English 5 United States History 5 Sewing, Cooking and Drawing 10 Elective 5 Music.	English 5 United States History 5 Sloyd or Sewing, Cooking and Drawing 10 Foreign Language 5 Music.	English 5 United States History 5 Sloyd or Sewing, Cooking and Drawing 10 Elective 5 Music.	All students in this grade are expected to take English, United States History, sloyd or cooking and sewing, drawing and music. Elective subjects in this course include gardening, German, Latin, Spanish, typewriting, bookkeeping, advanced arithmetic.
9	Physiography 10 English 5 Algebra or Arithmetic 5 Carpentry and Drawing and Cement 10 Music or Oral English 2	Sewing and Drawing 10 English 5 Arithmetic 5 Physiography 10 Music or Oral English 2	English 5 Ancient History 5 Physiography 10 Foreign Language 5 Music or Oral English 2	Physiography 10 English 5 Ancient History 5 Elective 5 Music or Oral English 2	English. Oral English. Arithmetic. Algebra—Elementary or Advanced. Geometry—(Plane and Solid). Trigonometry. Physiography. Botany. Zoology. Chemistry (Agricultural). Chemistry (Domestic). Physics. Horticulture and Forestry.
10	Agricultural Botany 10 English or Foreign Language 5 Economic Zoology 10 Forge and Drawing 10 Dairying 5	Cooking and Drawing 10 English 5 Domestic Chemistry 10 Algebra or Arithmetic 5 Music or Oral English 2	English 5 Mediæval and Modern History 5 Foreign Language 5 Algebra 5 Music or Oral English 2	Botany or Zoology 10 English 5 Algebra 5 Elective 5 Music or Oral English 2	Poultry and Dairying. Soils and Fertilisers. Farm Crops and Management Rural Law and Economics. Farm Accounts. Ornamental Gardening. Animal Husbandry. Farm Carpentry and Cement. Farm Forging. Latin. German. Spanish.

11	Agricultural Chemistry......10 Horticulture and Forestry...10 Poultry..........................10 Ornamental Gardening or Animal Husbandry.......10 American History and Civics 5	Dressmaking and Millinery..10 American History........... 5 Drawing and Design........ 4 Elective..................... 5 Music or Oral English....... 2 Textiles..................... 2	English..................... 5 American History........... 5 Foreign Language........... 5 Geometry................... 5 Music or Oral English....... 2	Chemistry...................10 Foreign Language........... 5 American History........... 5 Music or Oral English...... 2 *Elective.	Ancient History. American History and Civics. American History. Medieval and Modern History. Rural Home Economics. Household Economics: Sewing, Cooking, Dressmaking, Millinery, Laundry, Household Management. Cabinet Work. Freehand Drawing. Mechanical Drawing. Art and Applied Design. Stenography.
12	Agricultural Physics.........10 (Farm Mechanics.) Soils and Fertilisers; Farm Management.......10 Rural Law and Economics.. 5 Bookkeeping and Farm Accounts....................10 Special Problems.......... 5	Civics and Economics....... 5 Household Management and Cookery....................10 Rural Home Economics.....10 English..................... 5 Music or Oral English....... 2	English..................... 5 Civics and Economics....... 5 Foreign Language........... 5 Elective..................... 5 Music or Oral English....... 2	Physics.....................10 Foreign Language........... 5 Civics and Economics....... 5 Elective..................... 5 Music or Oral English...... 2	Typewriting. Bookkeeping. Penmanship. Music. Plant Pathology. Advanced Economic Entomology Special Problems in Agriculture. Solid Geometry. Economics and Civics.

A student may select one elective course, but it must have the approval of parents and principal.

Laboratory subjects like the sciences, household economics, agriculture, drawing and shop work require double time; *e. g.*, students spend ten periods a week in chemistry and receive five hours' credit towards the one hundred and sixty required for graduation.

*A student may elect American History and Civics in the 11th year and substitute another subject in the 12th year for Civics and Economics.

HOPKINS ACADEMY, HADLEY, MASS.

This Academy now conducts a course in agriculture in accord with the State law and the ruling of the state commissioners' office pertaining to "Independent Departments in existing High Schools" as contrasted with special vocational schools.

There are two methods of admission:

1. Any pupil who has passed from the grades into the high school may elect to take the agricultural course. The parent or guardian must agree to co-operate especially in the matter of home project work.

2. Any person over fourteen years of age who is to take up or has taken up farming, may apply for admission to this department. His application will be considered in the light of preparation and attitude. The principal question to be decided is, 'Can the person profit by the course and will he co-operate and not hinder?" The co-operation of the parent or guardian is doubly necessary in these cases and is demanded by the state as well as by the school.

It is particularly advised that pupils in the grades who find the work hard do not drop out of the grades for the sake of entering this department. The explanation of this advice is that the pupil will be thrown into classes with high school pupils whose progress may easily discourage him. It is much better to complete the grade work if possible.

On the other hand, a person who has dropped out of the grades at the age of fourteen but afterwards realises his need of this course may easily benefit by the course if he is much in earnest.

There is laid out four years' work in agriculture and this, with other work as advised, will fill a person's time for the full high school course. Besides agriculture and the allied practical work the average student will take four years of English, from two to four of science and American history with civics. Some very strong students may take more and some may be obliged to take less. Farm accounts, mechanical drawing of working plans, etc., are included with the agriculture as is also elementary woodwork.

Whenever a pupil enters by grade promotion or by examination and thereafter completes a full course as laid out for four years, passing all subjects as required, then a regular diploma will be granted and the word "Agriculture" inserted to specify the course. The same will be done in the department of domestic economics.

Whenever a person has entered the course by any method not giving real secondary school standing, he will, if his work for four years is sufficiently strong, be given a certificate at the time his class are granted diplomas and in case of extreme excellence he may be recommended for a diploma. A pupil who has done four years of faithful work, and has profited as much as the faculty thinks possible, will be given a certificate of attainment. Opportunity will be given any student to work out his transfer from the certificate to the diploma list.

The pupils of the department meet all the general regulations of the school. No distinctions are made except that class methods must be much different in this practical work. The boy is expected to be present at school, to meet the school rules for order and study except as agreement is made to the contrary. Some persons may attend only for the half day of agriculture and others may require special schedules.

Older boys who are doing real farm work regularly will be granted as much freedom in these courses as possible. It is proposed to have a consulting list of graduates and other older persons who cannot attend school, also a junior list for boys who intend to enter the course in a few years.

The great stress laid on "project work" in this department seems not to be thoroughly understood by all. The school project is an illustrative problem worked out by a few pupils on the school grounds or at least under the instructor's eye. This is class work and may be of the same type as the boy has at home. Examples of this type of project are as follows: pruning the leased orchard, lime-sulphur spraying for the scale, coddling moth spraying, laying concrete, repairing the sash for frames, fitting the land and caring for school garden, lawn making and decoration. Many of these are carried to neighbouring orchards and farms until the boys become somewhat skilled in the work.

The "home project" idea is one upon which the greatest stress is laid and which ought to be of greatest value. There must be an agreement between the father, the instructor and the boy. The problem must be worked out in a businesslike way, and whether it is experimental or commercial, exact records must be kept of cost, production, income, etc., and a series of written reports must be submitted. If this is followed up properly each pupil will gain much. It is advisable that the boy be allowed to run his project on a commercial basis.

COURSE OF STUDY IN THE AGRICULTURAL DEPARTMENT.

The following outline covers about half of the full school course, the remaining time being put on English, science and other academic subjects of value. When a boy does four full years of this work and gets good ranks, he will receive the regular academy diploma.

Beginning 1912, 1914, 1916 and other even years

Classes I and II.

Agricultural science and projects applied to Hadley. Kitchen gardening: vegetables and small fruits. Ornamental planting: shrubbery, flowering plants, lawns. Farm shop work: making and repairing for home and school use—hot beds, cold frames, etc.

Classes III and IV.

Agricultural science and projects applied to Hadley. Farm animals: types, breeding, management. Farm buildings: sanitation and conveniences, plans, construction, upkeep. Farm crops for keeping the animals, rotations, balancing, cultivation, etc. Farm machinery and implements, their use and repair.

Beginning 1911, 1913, 1915, 1917 and other odd years.

Classes I and II.

Agricultural science and projects applied to Hadley. Small animals: poultry, sheep, swine, bees—types, breeding, management, rotations, etc. Building and equipment for small animals—plans, cost, etc. Home grown crops for small animals—kinds, quantities, seeds, soils, fertilising, tillage, harvesting, storage. Farm shop work and other construction.

Classes III and IV.

Agricultural science and projects applied to Hadley. Fruit growing: orcharding and small fruits not before dealt with. Market gardening: markets, soils, seeds, fertilisers, tillage. Building and appliances—plans, devices, implements and machines—cost, use and upkeep. Farm shop work and other construction.

The determining factor in choosing both the subject matter and the methods of instruction for the agricultural departments must be productive farming. Work, therefore, scientific and economic, on farms, preferable on the home farms of the boys themselves must be provided for throughout the periods of training.

The productive into a graded series of individual farming projects. Among these each student with the consent of his parent will choose an approved list from year to year. His agricultural education will then consist of learning to glean from all possible sources the scientific knowledge required for the thorough understanding and the profitable execution of his farming undertakings, when subject, as they must be, to all the natural helps and hindrances of actual local conditions.

Accordingly it is part of the business of the agricultural instructor to supervise during the summer, also during the fall and spring terms, so much of the boy's productive farm work as forms part of the school course. The instructor's vacation for rest and professional improvement will be taken in winter, December 24 to about March 24, so that from seed time to harvest his student supervision shall be without interruption.

The home project work must be (1) real farming, (2) with co-operation of home and school, and (3) with careful record and reports. It may be in part experimental, but must be of a real productive nature.

BALLARAT AGRICULTURAL HIGH SCHOOL (AUSTRALIA).

By courtesy of R. B. Greig, Member Scottish Board of Agriculture.

This school is one of a number which have been organised in Victoria since 1906 for the further education of boys and girls on the assumption that the majority of the boys would become farmers, and the majority of the girls would proceed to higher institutions for training as teachers. The direct aims of the agricultural high schools, so far as the boys are concerned, have been described as follows:

1. To give boys such education as will direct their interest specially towards the land as an excellent means of gaining a livelihood, and further, to afford the practical experience and scientific training necessary for success.

2. To magnify agriculture as an occupation and a profession so that the boy may leave the school as an interested labourer, or for further study and practice on an experimental farm, in an agricultural college or at the University.

3. To provide a central institution for the dissemination of agricultural information by evening lectures, conferences or literature.

4. To superintend the government experimental plots and to record and interpret the results.

5 To provide a summer school in agriculture for primary school teachers.

The following are some of the conditions under which the Minister of Public Instruction established the schools:

(*a*) At least one-half of the cost of the necessary buildings and equipment was contributed by local subscription.

(*b*) An area of ground of not less than 20 acres was provided in a position convenient to the high school and vested in the Minister.

(*c*) At least fifty students paying prescribed fees were guaranteed before a proposal to establish a high school was entertained.

(*d*) Agricultural high schools were to be under the control of the Minister, who would be assisted in the questions affecting the course of study and general policy by a committee consisting of the minister of agriculture, the director of education and the director of agriculture.

(*e*) A local council, consisting of not less than five members, to be appointed by the Governor in Council, was to be established for each high school district. Its duty was to exercise a general oversight in matters affecting their school, to expend the maintenance allowance allotted to each school, to exercise such supervision as the Minister may authorise over the farm operations, and to advise the Minister in all matters especially pertaining to the school.

The pupils must be fourteen years of age and show satisfactory evidence that they are qualified to profit by the course of study in each school. The local council has the power to nominate a certain number of students for free instruction, the number not to exceed 10 per cent. of the total number of paying students. The pupils are non-resident; all are boarded in the neighbourhood under careful supervision. The fees are about £8 to £10 per annum.

The syllabus of instruction includes the ordinary school subjects to the extent to which they are carried in the ordinary grammar school, although the contents of the subjects are varied, and one-third of the pupils' time is given to agriculture. Sloyd, farm handicraft and drawing are prominent in the curriculum. The science subjects are chemistry, physical geography and climatology; the agricultural science in the syllabus is elementary botany and zoology, and from observation the methods, which are chiefly experimental and with a strong agricultural bias are very efficient. The "principles of agriculture" deal with soils, particularly Victorian soils, rotations and cultivation of crops, irrigation, feeding and general management of farm live stock ensilage, first aid to animals and the general principles of the valuation of fertilisers, milk and cream, farm crops and animal products.

The farm attached to the school is worked in such a way as to illustrate the principles laid down in each section of the syllabus, it is used as a centre of experimental work, and where it adjoins the school, as at Ballarat, the boys are constantly at work on it. When it is at a distance, the pupils spend a certain number of hours there each week, and sleeping accommodation is provided, so that a limited number may, in turn, see and take part in the whole round of farm work. As none of the farms is more than five years old, much of the preliminary work of building, clearing, draining, road making, etc., has been done by the pupils, and at Ballarat the grounds surrounding the school have been laid out, planted, and kept in order by them. The high schools exhibit produce, experimental material and students' work at the show of the Royal Agricultural

Society at Melbourne; the competition is very keen, and no doubt is one of the factors in stimulating the remarkable interest the boys take in the farm.

I have dwelt upon the agricultural side of the school, but it must be kept in mind that most of the girls and some of the boys are hoping to be teachers, or to follow pursuits other than agricultural, and their education is therefore on more general lines, and includes languages, and in the case of the girls' domestic economy. Mr. Frank Tate, the director of education for Victoria and the chief promoter of these schools, says that the reacting effect of the agricultural side upon the ordinary traditional subjects is great and satisfactory, and encouraged by these results the Department intends to develop high schools with a commercial and an industrial side on precisely similar lines. Certainly I have never seen more energy and interest than was displayed by those boys and girls when observed at work. Mr. Tate says further, that the fault of the vocational school in the past has been to make it narrowly technical—a pregnant opinion.

INDUSTRIAL EDUCATION—*What is being done elsewhere.*

BRITISH COLUMBIA.

The School Act makes provision for provincial aid for the furtherance of manual training and domestic science as follows:

> A per capita grant of $360 for cities of the first class, $420 for cities of the second class, $465 for cities and towns of the third class and $480 for district municipalities, per annum, based on the actual number of teachers and manual training and domestic science instructors employed in the public schools, including high schools, of such cities, towns or district municipalities, shall be paid by the Minister of Finance out of the Public School Fund quarterly to each of the municipal corporations of the city school districts of the first, second and third class, and monthly to the municipal corporations of district municipalities respectively:
>
> Provided that the schools have been conducted in accordance with the rules and regulations prescribed by the Council of Public Instruction and that each public school and high school building and its equipment be satisfactory to the said Council.
>
> A per capita grant of $480 for rural school districts per annum, based on the actual number of teachers and manual training and domestic science instructors employed in the public schools of such rural school districts, shall be paid monthly by the Minister of Finance out of the Public School Fund to each of the teachers and manual training and domestic science instructors employed in such public schools:
>
> Provided that the schools have been conducted in accordance with the rules and regulations prescribed by the Council of Public Instruction and that each public school building and its equipment be satisfactory to the said Council.
>
> In the event of the salary of any teacher of manual training or domestic science instructor employed in the public or high schools of the municipal school district being increased by the board of school trustees, a supplementary per capita grant of half the amount of such increase shall also be paid by the Minister of Finance out of the Public School Fund quarterly, on the last days of March, June, September and December, in city school districts and monthly in district municipality school districts to each of the municipal corporations; but in no case shall such supplementary grant so to be paid aforesaid by the Minister of Finance exceed the sum of one hundred dollars per annum.
>
> To the board of school trustees in rural districts and to the municipal corporation of any municipality whose board of school trustees shall provide suitable accommodation in connection with the school or schools under its jurisdiction for instruction in manual training, there shall be granted by the Council of Public Instruction a sum not less than three-fourths of the total initial amount expended for the necessary benches, tools, material, etc.

In 1912 experiments were made in manual training by giving instruction in the rural schools of a certain municipality. Five centres were established and the children were conveyed to and from the centres by the instructor in charge. The expenses of conveyance were defrayed in part by the government. The results of the experiment are reported as being very successful. A brief outline of what the city of Vancouver is doing is herewith given.

VANCOUVER.

From information received from the supervisor of manual training excellent provision has been made in Vancouver for certain forms of industrial training.

> Manual training in wood work commences in the Third Reader, for boys only. These are usually ten years of age. The course consists of simple articles in wood graded according to difficulty of tool manipulation and drawing. All boys are compelled to take the course unless physically unfit. One session per week is taken, consisting of a whole morning or a whole afternoon. Part of this time is given to theory of drawing, timber growth and preparation for commercial uses, etc. The course lasts until the pupil enters the high school. Whilst the boys are taking wood

work the girls in the Third Reader classes take sewing in the ordinary classroom under the regular teacher (directed by the supervisor of sewing); the girls of the Fourth Reader classes go to special centres for cookery lessons which as regards time, etc., are the same as the wood work classes.

The high schools are equipped with benches and tools for more advanced wood work and have also well guarded machines (jointer, bandsaw, circular saws and mortiser) to lessen the more laborious part of preparation of stock.

The pupils of the first year high school are compelled to take wood work. (This is the first year that this has been the rule, as previously it was optional, but as the great majority took the work it was made compulsory.)

The second and third year pupils are allowed the option of taking metal work. At present this consists of forging and tinsmithing. We have equipped for twelve to take forging and twelve tinsmithing. The forges are down draught variety and each has a complete set of tools necessary for the course. It is the intention to equip a machine shop later. The girls in the high school at present take sewing, dressmaking and a little millinery under the same regulations as the boys.

As illustrating the feeling of the boys on this subject one matriculation class was so circumstanced that it was excluded from the metal work course. A representative at once interviewed the supervisor of manual training with a suggestion that they be allowed to take the course, holding the class from 3 to 5 p.m. each Tuesday. This was arranged and the whole class attends.

No provision has up to the present been made for commercialising any of these classes nor has any arrangement been made for specific industrial courses.

ALBERTA.

Up to the present no financial aid has been granted by the Government in support of industrial education. Good progress has, however, been made by individual school boards in the direction of the employment of directors of various forms of industrial education and the operation of industrial classes in evening schools. In this respect the cities of Calgary and Edmonton are deserving of special mention. A brief account of what is being undertaken in industrial work by these two leading centres has been furnished by school officials.

CALGARY.

The first class for manual training was established in Calgary in January, 1901, as a part of the organisation established by Professor Robertson under the MacDonald Fund. This was continued year after year, was taken over by the board at the expiration of the time during which it was maintained by the MacDonald Fund, and was extended to include a course of hand work throughout all the grades from the beginning of the year 1907. For a number of years the girls of the corresponding classes were taught sewing by their own teachers, but in the fall of 1910, household equipment was installed, and since that time the girls of Grades VII and VIII have regular lessons in cooking, laundry work and the various departments of household economics. The staff at present consists of: (*a*) in the manual training department, a supervisor and three assistant teachers, with another to be engaged in January; (*b*) in domestic science, a supervisor and four assistant teachers.

In manual training and household science well equipped rooms in each school building are provided for the boys and girls of the senior classes. The boys take wood work, including turning; the girls cookery and laundry work. The course is two years and is given in Grades VII and VIII. Beginning with the present session manual training in wood work has been introduced into the high school for the boys, and sewing and garment making for the girls. Beginning at the other end of the school system, all children in Grades I to IV take a course in elementary hand work. In Grades V and VI the girls take sewing in their class rooms and the boys take some very simplified forms of work in thin wood in the manual training room.

About one thousand dollars has been spent on the equipment of the manual training room, and about nine hundred and fifty dollars on the cookery room, which includes a very small laundry equipment.

In the evening classes no expenditure was made on buildings for 1912, but in 1911 1,040 students were accommodated in various rooms borrowed from the day schools. The expenditures for salaries in evening classes for 1913-14 will be about two thousand dollars per month. About three thousand dollars has already been spent for equipment.

So far as the high schools are concerned, nothing yet seems to have been done. A commission, however, was appointed to visit certain centres with a view to making recommendations to the board of trustees along industrial lines. Amongst other recommendations made the three following are significant. Action, however, has as yet been taken only with regard to the second.

HIGH SCHOOL.

1. (*a*) That the present commercial course in the high schools be developed into a strong vocational course in a well equipped department with the latest appliances.

(*b*) That steps be taken to arrange part time co-operative courses during the last year or term.

(*c*) That an advisory committee of business men be invited to co-operate so as to make (*a*) and (*b*) thoroughly effective.

(*d*) That steps be taken at once to give all students in the high school a measure of industrial work; shop work for boys and household science for girls.

(*e*) That the art courses be strengthened and related to the industrial work in a vital and direct way.

Pre-vocational Courses.

2. That immediate steps be taken to organise pre-vocational courses for boys and girls in some convenient centre. The Fitchburg, Massachusetts, scheme of (*a*) industrial side, (*b*) commercial side and (*c*) household arts side, appears to us to be a suitable one for Calgary's needs.

Vocational High School.

3. (1) That steps be taken at once to plan a large modern building with ample facilities for various branches of a secondary education.

(2) That generous provision be made in this building for industrial and commercial training for (*a*) full courses, (*b*) short courses (vocational), (*c*) part time continuation courses, (*d*) evening classes.

(3) That full provision be made for scientific and general training, including, also, college preparation and teacher training.

(4) That household arts and sciences be provided for on a broad scale so as to include (*a*) full general course, (*b*) shorter vocational course, (*c*) evening classes.

(5) That an advisory committee of citizens be appointed for (*a*) commercial subjects (recommended earlier), (*b*) industrial subjects, (*c*) household arts.

So far as evening technical classes are concerned, Calgary occupies a foremost position among our Western cities. These have been in operation for the past two or three years and have been exceptionally well patronised. The course arranged for the sessions which opened in October provides for instruction in mechanical drawing, machine drawing, drawing for house carpenters, building construction, sheet metal drafting, painting and decorating, plumbing and sanitation, heating and ventilation, electrotechnics, gas, gasoline and oil engines, shop mathematics, applied mechanics, industrial chemistry, practical arithmetic, practical English, manual training (wood work). The course in household arts provides courses in cookery, plain and fancy sewing, dressmaking, millinery, laundry work, home economics. The commercial course includes business English, commercial law, commercial arithmetic and bookkeeping, advanced bookkeeping, typewriting, shorthand; and the art classes drawing, light and shade, painting, design, industrial art.

There are no entrance examinations, but students are advised to consult the director of the class instructors if in doubt as to the course they should enter.

Any student not showing aptitude for the course entered upon may be directed to exchange into a more elementary course. Should the attendance in any class become poor, the committee may discontinue it at two weeks' notice. A minimum of twelve students will be required for an advanced or second year course in any subject.

In addition, classes are also arranged for foreign-born citizens. This is of special importance as Calgary numbers among its population many foreign-born people who are handicapped by their inability to speak and write English. These classes are especially planned for the betterment of this class of people.

EDMONTON.

In the public schools at Edmonton an elementary industrial course is given which begins with paper, clay, weaving and stick work in Grade I, with addition of cardboard and reeds in the intermediate grades up to the end of the Fifth grade. The work is divided in Grade VI and a course in sewing is introduced for the girls and an introductory course in the study of woods and practical drawing for the boys. In Grades VII and VIII bench work is provided for the boys and cooking for the girls. The details of this course are fully set out in the Course of Studies.

In the high schools, one year's work in cooking for the girls and one year's work in cabinet making for the boys has been arranged. This work has not yet received recognition by the Department of Education as an option on matriculation or other courses. It will likely be extended to a two years' course as soon as fuller accommodations can be secured. Bench work in metals will be added with a small amount of forge work for the boys' course and also a course in cutting and fitting, machine sewing and elementary principles of laundering and, probably, a little millinery for the girls' course.

A new technical school has just been established and is now in operation. Formerly the only work existing was in the night classes in mechanical drawing, shop mathematics, etc., relating to the building trades, but the board of trustees decided to meet its obligations properly. It has just established day services in the technical school as well as in the high school and boys and girls are being enrolled every day. For this work the three definite things kept in view are: (1) A year's technical course, consisting both of theory and practice. (2) An additional year's course besides this for specialisation in some particular line of work. (3) The doing of work to supplement the academic work for matriculation in the applied science of the University. In addition to this, half-time work will probably be arranged during half the day for boys who have to work in the shops the other half of the day. There are also courses in domestic science, dressmaking and laundry work for girls, approximately a year shorter than those for boys.

A full complement of night work will probably be arranged in the furnishing of theory to workmen who wish to become leaders in their trades or improve themselves in practice or in both theory and practice. There will also be a variety of courses in wood working, basketry, art, clay modelling, etc., as liberal culture courses. Printing is arranged for both day and night classes and a good plant has been installed.

MANITOBA.

In Manitoba hand work has found its way into the elementary schools as part of the daily programme in the form of paper folding and cutting, modelling in plasticene and clay, thin wood work with knife or fret saw, weaving and basketry, sewing, freehand drawing and other forms that can be applied in the ordinary class room with inexpensive equipment. Teachers are prepared for this by systematic training in these operations as part of the Normal School course.

In cities and towns this work is extended into the higher classes of the elementary grades in the form of manual training for boys and garment making and cooking for girls. In Winnipeg work of a much more technical nature is organised in the secondary schools. Here the citizens have shown their belief in industrial training by the erection of two large high schools, costing with their equipment in the neighbourhood of $400,000 each. In these schools general education is carried on hand in hand with industrial training.

The courses offered to day pupils include: for boys—mechanical drawing, cabinet making, pattern making, forging, machine shop practice, electrical working and printing; for girls—drawing and design, plain sewing, dressmaking, millinery, house furnishing and decoration, laundry work and advanced courses in household science.

The practical work for girls is fostered by the Department of Education in what is known as the Practical Arts' Course leading to a teachers' certificate, in which the several subjects of the Household Arts Course may be taken as equivalents for a portion of the mathematics and natural science ordinarily required.

These schools also serve an important purpose during the winter in providing evening technical classes for students engaged in occupations during the day. The courses offered are bookkeeping, typewriting and stenography, millinery, cooking, dressmaking, architecture and building trades, painting and decorating, electrical work, machine shop practice, structural design, machine drawing and design, cabinet making and wood turning, pattern making, blacksmithing, plumbing and tinsmithing, sheet metal work and printing.

At present 1,857 students are enrolled with an average attendance of 1,688 and the interest is most marked. These evening classes seem to meet a real need in the community.

A general statement of the cost of the special equipment for these schools will be found in the appendix.

Financial aid as follows is given by the Department of Education to schools undertaking manual training or other forms of industrial work, and is granted to both elementary and secondary schools.

In the case of manual training, the Department defrays 80 per cent. of the cost of the initial equipment to a maximum of $200. In the case of domestic science, a grant of 50 per cent. is made for a similar purpose up to a maximum of $400. Other than these initial grants, no further assistance is rendered, except that any special teachers employed receive the usual grant of 65 cents per day as provided for in The Schools Act for regular teachers.

INDUSTRIAL EDUCATION IN ONTARIO.

In The Industrial Education Act and the Regulations of the Department, the name "Industrial" is applied to both day and evening schools and classes for the preparation of workmen and workwomen; and the name "Technical" to those for the preparation of foremen and forewomen and the holders of minor directive positions in the trades. Manual training and household science, while introductory to industrial and technical courses, are now classed as cultural and practical subjects of the high and public school courses of study whether they are taken up in day or evening classes.

CLASSES OF SCHOOLS.

At the session of the Legislature in 1911, The Industrial Education Act replaced all the preceding Acts which dealt with elementary industrial, technical and art education; and this Act is the only one under which industrial, technical and art schools can now be established and maintained at the public expense. Section 4 of the Act provides for the following classes of schools, which a high school board or a board of education of any city, town or village, or an urban continuation school board may establish with the Minister's approval.

(1) General industrial schools for instruction in such subjects as may form a basal preparation: (*a*) for the trades, and (*b*) for similar manual occupations which are not classed as trades; the courses including workshop practice, with correlated drawing, English, mathematics and science, and continuing the essential subjects of a good general education.

(2) Technical high schools and departments of high schools for the training of duly admitted high school pupils for minor directive positions in industrial establishments and for admission to the higher scientific schools.

(3) Co-operative industrial classes in which and under such conditions as may be agreed upon between the board and the employer: (*a*) apprentices, whether indentured or not, employed in the workshop may receive in the day schools instruction bearing upon their trades; and (*b*) pupils attending the day schools may receive practical instruction in the work-

shops. The former of these may be known as factory co-operative, and the latter as school co-operative industrial classes

EVENING SCHOOLS.

(4) Industrial, Technical and Art Schools in which workmen and workwomen employed during the day may receive in the evening theoretical and practical instruction in their trades.

ADVISORY INDUSTRIAL COMMITTEE.

Under this Act also the control of these schools is vested in an advisory industrial committee, composed of twelve members; six members of the board of school trustees and six others not members of the board, three of whom are employers and three employees in connection with the manufacturing and other industries carried on in the locality; of such employees at least one should be an operative. It is assumed that these representatives of employers and employees have an expert knowledge of industrial conditions. The powers of the committee are, however, exercised subject in all cases to the approval of the board, and in certain cases to the joint approval of the board and the Minister. The cultural manual training and household science classes, whether day or evening, are still under the sole control of the school board.

ESTABLISHMENT OF SCHOOLS.

In establishing industrial, technical and art schools and classes the advisory committee is usually confronted with three main difficulties:

(1) Indifference on the part of those for whose benefit the schools and classes are intended;
(2) The lack of competent teachers;
(3) The difficulty of constructing courses of study suitable to the requirements of the locality.

The following statements by Inspector Leake indicate in a general way the situation in Ontario:

"The movement in favour of industrial education has made gratifying progress since the passing of The Industrial Education Act. It is now generally recognised that the time for mere academic discussion has passed and that definite plans and organisation are required. Whatever hints and suggestions we may get from other countries the problem will remain peculiarly our own. It will not do to copy; we should only adapt. Each locality has its own problems and these must be solved strictly according to local requirements. The efforts put forth so far have been mainly in the direction of evening classes; they seem to offer the line of least resistance. Outside of Brantford, Hamilton, London and Toronto, nothing, however, has been done in the direction of real industrial day classes. There seems to be unfortunately an indifference, if not an antipathy, to any form of instruction which is calculated to fit directly for work in the shop or at the bench. This indifference must be overcome before parents will be willing to place their boys and girls in such schools. They must be shown the money value of industrial training. A large portion of the attendance at the present evening classes consists of mature men and women, in many cases fathers and mothers. After a session or two of such classes they will, no doubt, learn that the instruction given is worth while and will in the future be willing to make the sacrifice necessary to allow their children to attend day classes."

To indicate the great interest taken in industrial education in Ontario, the following is a list of the technical and industrial schools established since the passing of The Industrial Education Act in 1911:

DAY SCHOOLS.

1. General Industrial Schools—Brantford, Hamilton, London and Toronto.
2. Special Industrial Classes—Haileybury, Sudbury, Toronto.
3. Technical High Schools and Departments of High Schools—Haileybury, Hamilton, Sault Ste. Marie, Sudbury, Toronto.
4. Co-operative Industrial Classes—London, Sault Ste. Marie, Toronto.
5. Classes for Instruction in the Fine and Applied Arts—Hamilton, London, Toronto.

EVENING SCHOOLS.

6. Industrial, Technical and Art Schools—Berlin, Brockville, Collingwood, Cornwall, Fort William, Galt, Guelph, Hamilton, Ingersoll, London, Ottawa, Owen Sound, Paris, Pembroke, Peterborough, Port Arthur, Renfrew, Smiths Falls, Stratford, St. Thomas, Toronto, Windsor.

NEW BRUNSWICK.

MANUAL TRAINING AND NATURE STUDY.

The provisions of the school law are to the effect that:

> The Lieutenant Governor in Council is authorised to make the following grants from the Provincial revenues to aid in the establishment and maintenance of manual training and instruction:
>
> To any board of school trustees, whether in a city, town or rural district, which shall provide suitable accommodation in connection with the school or schools under its jurisdiction for instruction in manual training, there shall be granted a sum not less than one-half of the total amount expended for the necessary benches, tools, material and other equipment required.
>
> To any licensed teacher who shall obtain from any manual training school approved by the board of education a certificate of fitness to teach the system, and who shall in addition to the other regular work of the school under his charge give instruction in manual training, in accordance with the regulations to be made by the board of education, there shall be granted in addition to the Provincial grant provided for by this chapter, the sum of $50 per annum.
>
> To any certified teacher who may be employed in cities, towns or other populous districts to give instruction in manual training to the pupils of the several schools and who gives his full time to such instruction, under the direction of the local school board and in accordance with the regulations of the board of education, there shall be granted the sum of $200 per annum.
>
> Duly licensed teachers who shall have qualified for giving instruction in nature lessons in connection with school gardens, by completing a prescribed course at the MacDonald Institute at Guelph, or at any other institution approved by the board of education, and who shall thereafter give instruction in said subjects at any public school having a school garden attached, in accordance with the regulations of the board made from time to time, shall receive from the provincial revenues at the rate of $30 per year in addition to the ordinary provincial grant provided for by section 13 of The Schools Act.

There shall be granted to the trustees of such school districts as shall provide and maintain school gardens in connection with their several schools, the sum of $20 per annum to assist them in caring for such gardens and improving and keeping in proper condition the school grounds.

Scholarships of the value of $50 each in the case of female teachers and of $75 each in the case of male teachers shall be granted to such teachers as may after nomination by the board of education pursue a course of three months in nature study and school gardening at the MacDonald Institute, Guelph, for the purpose of qualifying themselves to give instruction in these subjects in the public schools of New Brunswick; provided that not more than twenty-four such scholarships in any one year shall be granted. Any scholarships paid since the sixth day of August, A.D. 1904, as provided for in this paragraph, shall be deemed to have been legally paid.

The regulations governing instruction in manual training and household science are as follows:

A detailed statement, properly attested by the trustees, showing that not less than three work benches with necessary tools and materials have been provided to the satisfaction of the director of manual training, and suitably placed in the school for the use of the pupils and giving the actual cost of the same, must be submitted to the chief superintendent together with the certificate of the director of manual training before the issue of a draft for the grant provided for in section 123, subsection (*a*) of The Schools Act.

This grant is made for the initial outfit only; but when an enlarged equipment is required, or when renewals are found necessary, a list of articles needed should be forwarded to the director of manual training, upon whose approval and recommendation one-half the cost of such additional equipment or renewals shall be paid from the provincial revenues.

After a manual training or household science department has been in operation for one term the materials for future use by the pupils in the school shall be supplied by the trustees out of the district funds and no grant on account of such materials shall be made from provincial funds.

In addition to the instruction provided in the Normal School for the regular student teachers, special courses commencing respectively on the second Tuesday in September and the first teaching day in January shall be provided for licensed teachers to enable them to qualify for giving instruction in manual training. The teachers in attendance at these courses shall give not less than twenty-five hours to the work per week during the course, and those whose work during the course shall be approved by the director and who shall pass the prescribed examinations at the close shall be awarded a certificate authorising them to teach manual training in rural schools. The provisions of regulation 39, section 2, in regard to travelling expenses, shall apply to teachers attending these courses.

The duties of the director of manual training appointed under the provisions of section 125 of The Schools Act shall be:

To supervise all manual training work in the public schools for which purpose he shall visit twice a year, or oftener if required, by the chief superintendent, every department of manual training and report thereon annually to the chief superintendent.

To confer with boards of school trustees in regard to the establishment of manual training in their respective schools and to render such advice and assistance as may be needed.

To give instruction at the Normal School to teachers attending the special courses in the theory of manual training, the management of classes, the arrangement of room, etc., and to supervise and direct all manual training in connection with the school.

To examine the work and judge of the qualifications of the teachers who shall have completed any of the special courses of training at the Normal School and to recommend to the board of education for certificates those whom he shall find properly prepared for giving instruction in manual training in the public schools.

No manual training school can be recognised as coming under the provisions of the statute until the teacher and equipment (including the room) are approved by the board of education. Licenses to teach manual training will be issued to teachers who have been graduated from the special training courses at the Provincial Normal School or other institutions approved by the board of education.

NOVA SCOTIA.

The provisions of The School Law respecting manual training are as follows:

When the trustees or commissioners of any school section provide a department for manual training in any of the mechanical or domestic arts, with adequate equipment for at least twelve pupils at the same time and have employed a teacher certified by the Council to be competent to give practical instruction therein, and have caused such instruction to be given free for one session of two hours each week to the residents of the section, and to have in these and in all other respects efficiently conducted the public schools of the section in accordance with law, then the Council may pay out of the provincial treasury to such trustees or commissioners, in semi-annual instalments or otherwise, as determined by the Council, a sum of fifteen cents for each two hour lesson to each pupil, provided that the whole amount so paid out of the provincial treasury to such trustees or commissioners shall not in any year exceed six hundred dollars; except in the case of the city of Halifax, in which the amount shall not in any year exceed twelve hundred dollars.

The Council of Public Instruction makes the following recommendations under the above provision of the school law:

The Council, recognising the desirability of giving equal opportunities under section 74 of The Education Act to boys and girls, recommends the establishment of manual training schools of two kinds; one more especially adapted for training in the use of tools; the other more especially adapted to girls, for training in cookery and other domestic arts—working accommodation for twelve pupils in each being recognised as sufficient. But if only one branch should be provided for, the minimum equipment should have full working accommodation for at least sixteen pupils at one time. As in most cases, attendance at one of these schools will interrupt the work of the pupil for a forenoon or an afternoon in the other public school, it is necessary: (1) That such interruption should not occur oftener than once a week; and (2) that the work in the manual training department should be a full half day's work. To ensure the net two hours of work specified in the Act the time of session should be two hours and a half—the extra half hour covering the time of roll call, preparing to work, fixing up, general instructions, etc.

As there are about forty weeks in each school year, each pupil who attends one half day each week will earn for the trustees six dollars of the grant, until the maximum of $600 is reached. Ten pupils in regular attendance each morning and afternoon of the five days of the week—that is, one hundred pupils in a school section, by attending regularly, will enable the trustees to draw the full grant. But as so regular an attendance cannot be expected, it will be necessary to have perhaps more than sixteen benches, etc., to accommodate classes which will actually qualify for the maximum grant.

The teacher and the equipment must for the purposes of the Act be approved by the Council. Grants are paid only after the equipment and the work done are satisfactorily reported upon by an inspector or supervisor.

So far as the domestic arts are concerned, the equipment must include working accommodation for at least twelve or sixteen pupils one table for each four pupils, or any equally effective arrangement, one stove for the general heating of water and at least one good large ordinary cooking stove and an oil cooking stove. Special care must be taken to have the sanitary condition of the room all that can be desired.

The domestic arts course should contain at least twenty practical lessons in plain cooking, demonstrating the best and most economical methods of cooking the staple foods of the majority of people, food for the sick with practical demonstrations in household sanitation, household economics, laundry, textiles and needlework. Should needlework be fully taken up in the other public school grades, such a subject may be omitted in order to give more time for the other domestic arts.

Respecting local technical schools the Governor in Council may, from time to time, establish in such places as it may be deemed advisable, local technical schools to furnish industrial education of such character and extent as will most effectively meet the requirements of the population and industries of the locality.

No such local technical school shall be established until the necessity or desirability thereof, the amount of local aid to be furnished, the facilities which can be afforded and the advantages to be derived have been reported upon by the Director of Technical Education, and he has recommended the establishment of such school.

The Council of Public Instruction may make such rules and regulations as they deem advisable for the support, conduct and management of the school.

Subject to such regulations the Council may associate the board of school commissioners of the place in which the school is established or a committee thereof or any other person or persons with the director in the management of any local technical school.

The Council of Public Instruction shall, upon the recommendation of the director, appoint such instructors as may be required for the carrying on of such schools and shall fix their salaries.

Such sums as may be required in addition to the local aid provided, for the establishment and maintenance of the local technical schools shall be paid out of the provincial treasury.

The council of any city, town or municipality may grant such amount as is deemed expedient towards the support of a local technical school and may include such amount in the annual estimates, and such amount shall be rated and collected annually in the same manner and with the same remedies as other rates and taxes.

The evening schools are public schools under the immediate charge of the trustees or school board just as are the day schools, only the sessions are held at night and each session can count for no more than half a day. The return must be summed up with the return of the day school in the section just as if they were all day schools by the principal of the schools of the section. No evening school is started by the school board without the approval of the inspector. The regulations governing these schools are as follows:

(*a*) Trustees of public schools may establish in their sections evening schools for the instruction of persons upwards of thirteen years of age who may be debarred from attendance at the day school.

(*b*) Such evening school shall be in session two and one-half hours, and in relation to public grants two evening sessions shall count as one day. The prescribed register shall be kept and a return of the school made in the form directed by the superintendent.

(*c*) No portion of provincial or municipal funds for education shall be appropriated in aid of evening schools unless teachers are duly licensed.

(*d*) The council would greatly prefer that the teachers of evening schools should be other than teachers of day schools; but when in the opinion of the trustees a night school is desirable and no other teacher except that of the day school can be obtained, on the recommendation of the inspector the council, through the superintendent, may authorise the day school teacher to conduct the evening school for no more than three nights each week during the term agreed upon.

INDUSTRIAL EDUCATION IN THE UNITED STATES.

From the information gathered by your commissioners it is evident that while much progress is being made in a number of States in the matter of industrial education the movement is still in the initial stage. At the same time the problem is being faced, and in a short time many of the difficulties that are now apparent will undoubtedly be removed.

The institutions that occupy the most important place at the present time in industrial training are the preparatory trade schools, the trade school, the evening school, the part-time school, the corporation or apprenticeship school and the technical high school.

The Preparatory Trade School.—This school is a type of institution designed to reach those boys and girls who leave the elementary schools at about fourteen years of age, and to give them a better equipment to enter industrial life at sixteen. It takes the children only at an age when the question of wages is not the most important consideration, and when parents are willing to have their children attend if assured that some practical benefit will result. In Massachusetts and New York there are about a dozen of these schools taking up woodworking, electrical bookbinding, printing and machine trades. This type of school is bound to become an important factor in industrial education in towns of considerable size in view of the practical benefits resulting from the training received and possibilities of attendance by a large number of boys and girls well fitted to become industrial wage earners and the comparatively moderate cost for large communities. The training received will undoubtedly reach many boys and girls who now leave school at the end of the compulsory period. By reason of the nature of the training given, and their close relation to the elementary school, it is evident that these schools are well fitted to be easily administered by public school authorities.

The Trade School.—The trade school is an institution that encounters economic difficulties both as regards maintenance and expense of attendance. Its function is to take students at the age of sixteen or over and furnish a training to take the place in whole or in part of the apprenticeship system. The expense of operating this class of school is almost prohibitive, except in large cities where work is highly specialised and industries concentrated.

Evening Schools.—These schools are of importance by reason of the fact that they reach the greatest number. They afford a simple and effective means of bringing industrial education within the reach of young men in view of the fact that they afford a supplementary means of instruction in mathematics, science, drawing and technical subjects. There is no special difficulty in their organisation and they are well adapted for providing industrial education for the great mass of young working men who wish to further their knowledge after the wage hours of the day are closed.

Evening Continuation Schools.—These occupied for a long time an important place in industrial education in Germany. Their influence is beginning to wane in view of the fact that the evening is not regarded as the best time for giving instruction to pupils between the ages of fourteen and eighteen years. More of this work is now being done during the day, but difficulty is experienced in inducing manufacturers to allow learners in their establishments to further their industrial education during working hours. Such an arrangement deserves encouragement. If boys were allowed to continue their studies for certain periods a week without any deduction from their salary it would be a move in the right direction. As the public school would not be called upon by such an arrangement to supply costly equipment, but only such instruction as was fitted to the technical needs of the learners, the expense of administration would be reduced to a minimum. While this plan may apply in large cities where many apprentices are employed in highly specialised lines, it can easily be seen that where industries are small and varied the problem would be a difficult one to carry out.

The Part Time School.—This is at present engaging the serious attention of educationists. By this system high school students are given opportunities to spend half of their time at work in industrial establishments and half at school. The schools at Beverley and Fitchburg referred to elsewhere in the report are good examples of schools of this class. This type of school is now found in a number of cities, and it is generally conceded that satisfactory results are being obtained.

The Apprenticeship School.—This is a part time school, giving practical training and instruction within the commercial establishment. While this system may be to a certain extent workable in large concerns it is not regarded as generally practicable, and it is doubtful if it will come into general use.

MASSACHUSETTS.

In the matter of industrial education Massachusetts has undoubtedly taken the lead in state activity. By a recent Act of its Legislature industrial schools may be established by the local school boards which are free to control these schools provided they assume the responsibility of supporting them. State aid is granted if they conform to the requirements of the State Board of Education and are approved by that body.

In January, 1911, the State Board of Education issued a report dealing with the question of agricultural education. In this a recommendation was made that part time schools be established "in which the pupil should give part of his time to systematic work and tabulation of results upon a part of the home farm, leaving the school instruction to deal with the scientific principle involved, agricultural methods and a study of the student's experimental results."

This State set aside during the year 1912 some $7,000 for the purpose of investigating the possibilities of "part time" instruction, and a report has already been made to the State Board of Education.

During the year a number of independent industrial schools have been started and amongst these are a school for printing in Boston; a school at Lowell dealing with the textile industry; and others at Somerville, Springfield, Westfield and Worcester. These schools are all of the preparatory trade school type, and are in addition to the important schools previously established at Worcester, New Bedford and Beverley.

Part time classes have also been started at the independent trade school at Worcester by which apprentice boys in the machine trade spend one-half a day of four hours each week at school. During this time they receive instruction according as they elect in English, shop computations, training and lectures in shop practices or in practical machine work. This system has been in operation for about a year. Classes are held during a part of the working day in time paid for by the employer. A number of industrial evening schools were also established at various centres in the State during the year. Attendance at these schools is limited by statute to boys over seventeen years of age who are actually employed during the working day. The state authorities have also considered the question of extending state supervision over students in co-operative schools during the period they are at work in commercial shops. It is felt that such control is necessary in order to secure the fullest efficiency of the combined theoretical and practical instruction afforded by such schools.

NEW YORK.

Some four years ago New York passed legislation relating to industrial and trade schools. This has been recently added to and provision is now made for schools of agriculture, mechanic arts and homemaking, the same being open to pupils who have completed the elementary school course or who have attained the age of fourteen or have met such other requirements as local school authorities may have prescribed.

Courses of study have been formulated by the State Education Department for use in intermediate industrial schools covering the subjects of industrial and commercial geography, industrial arithmetic, mechanical drawing and homemaking. Syllabi in farm mechanics, dairying, animal husbandry, farm crops, etc., have also been developed for the agricultural schools. There are at present in the State thirty-five industrial and trade schools employing some one hundred and forty-five teachers.

Provision has been made for the training of teachers for vocational work and in three State Normal Schools this is being done. One school has provided an evening training school for mechanics who wish to fit themselves for teachers. Stress in these schools giving teachers' courses is laid upon the planning of courses and equipment, shop mathematics, electricity and mechanics, and also methods of instruction in teaching industrial subjects. One of the Normal Schools has provided a course in training for teachers in agriculture. The work is intended to prepare teachers to carry on any of the scientific work related to agriculture outlined in the syllabus of the department.

WISCONSIN.

The State of Wisconsin has been devoting much attention to the question of industrial education. A commission created by the Legislature submitted a report respecting the extension of industrial and agricultural education and in this report brings forward a number of practical measures for the benefit of young workers interested in the industries and agriculture. They speak strongly on behalf of day "continuation schools" and for compulsory attendance at such schools. Their recommendation in this matter is as follows:

"That as soon as school facilities can be provided for children between fourteen and sixteen years of age already in industry they be compelled to go to school a specified time each week; that this time shall be expended as far as possible in industrial training; and that the hours of labour for such children shall not exceed eight hours per day for six days of each week, which time shall include the time spent by each student in vocational schools." They further recommend that "a temporary state advisory Board for industrial education be appointed by the governor; that there be established in every community where industrial education is undertaken local boards of the same general nature as the temporary state advisory board, which board shall have similar control in their localities over industrial education and evening schools; that after careful investigation by the boards established for this purpose continuation schools, trade schools and evening schools shall be gradually established in the State and that state aid shall be given for these purposes under strict limitations as to methods and in such a manner that all training given in such schools can be combined into a harmonious and economical system."

As a result of this report the Legislature of Wisconsin has enacted that "when any school board shall decide to establish a trade school or schools a tax not exceeding three-tenths of a mill upon the dollar shall be levied upon the total assessed value of property in the city and used for the establishment and maintenance of the trade school; that the apprenticeship laws of the State shall be amended so as to prescribe that every apprentice shall receive instruction not less than five hours a week in English, citizenship, business practice, physiology, hygiene, the use of safety devices and such other branches as may be approved by the state board of industrial education, and that such instruction may be given in the public school; that whenever any evening school, continuation class, industrial school or course shall be established for minors between the ages of fourteen and sixteen working under the local board, every such child shall attend such school not less than five hours per week for six months in each year, and every employer shall allow all minor employees over fourteen and under sixteen years of age a corresponding reduction in hours of work; that employers shall allow a reduction of hours of work at the time when the classes are held whenever the working time and that of the classes coincide; that illiterate minors shall attend public evening or continuation schools; that no state aid shall be granted to any school for instruction in agriculture, domestic economy, manual training or industrial branches unless the salary paid to every teacher instructing in such subjects be at least $60 per month; that a state board of industrial education be created, to consist of three designated educators, *ex officio*, and six appointed members, of whom three shall be employers of labour and three shall be skilled employees, and that this board shall have control over all state aid given under the Act; that the state superintendent of public instruction shall appoint an assistant in the department of instruction, to be known as assistant for industrial education; that in every town or village or city of over 5,000 inhabitants there shall be and in towns, cities and villages of less than 5,000 inhabitants there may be, a local board of industrial education whose duty it shall be to foster and establish and maintain industrial, commercial, continuation and evening schools, and that such board shall consist of the superintendent of schools and four other members, two employers and two employees, who shall be appointed by the local board charged with the supervision of the schools and who shall serve without pay; that no state aid shall be granted to any school under this Act without the approval of the local board of education, and that no money appropriated by the city, town or village of these schools shall be spent without the approval of the local board of education; that whenever twenty-five persons qualified to attend an industrial, commercial, continuation or evening school file a petition therefor with the local board of education, the board shall establish such school or schools or provide other facilities, as authorised in this Act."

OTHER STATES.

A number of other States have also taken action along the line of industrial training. The State of Maine, in addition to the extension of manual training, household arts and agricultural instruction in the elementary and normal schools, has also provided directly for the establishment of industrial or preparatory trade schools. The clause relating to this is as follows:

"The superintending school committee of any town when authorised by vote of the town shall establish and maintain as a part of the public school system of such town a general industrial school for the teaching of agriculture, household science, the mechanic arts and the trades. Such general industrial schools shall be open to pupils who have completed the elementary school course or who have attained the age of fifteen years. Such schools must be supported by funds raised in addition to the usual funds for the schools. The State will aid such a school to the amount of two-thirds of the cost of instruction, not to exceed $2,000 for any one town in one year."

This would seem to imply that the intention was to introduce vocational classes into the regular elementary and secondary schools and also to provide for the establishment of special vocational schools when authorised by a vote of the town.

Pennsylvania authorises the board of school directors to "establish, equip, furnish and maintain the following additional schools or departments for the education and recreation of persons residing in said district, which said additional schools or departments, when established, shall be an integral part of the public school district and shall be so administered, namely: high schools, manual training schools, vocational schools, domestic science schools, agricultural schools, evening schools, kindergartens, libraries, museums, reading rooms, gymnasiums, playgrounds, schools for blind, deaf and mentally deficient, truant schools, parental schools, schools for adults, public lectures, together with such other schools or educational departments as they may see proper to establish." The state superintendent of public instruction may also appoint one expert assistant in agricultural education, one expert assistant in industrial education and one expert assistant in drawing.

While the State of Michigan has as yet made no provision for state support it has provided for school districts to establish and maintain trade, vocational, industrial, marine, and manual training schools, gymnasiums and scholarships.

Indiana took an important step in 1911 in appointing a commission for the purpose of investigating industrial and agricultural education. As a result of their report to the Legislature on the subject of vocational education a number of important measures were enacted. The compulsory laws of the State were codified and some excellent changes made in the machinery for its enforcement. A state board of truancy, consisting of the state superintendent of public instruction, a member of the state board of education, and the secretary of the state board of charities was created to enforce the new law. No child under sixteen years of age is permitted to enter employment until he has passed the fifth grade in the common schools. All children between fourteen and sixteen years of age must be either in school or at work. When they lose their employment they are required to return to school.

In what is probably the most comprehensive statute yet enacted, the Indiana Legislature established a state system of vocational education giving state aid for training in industries, agriculture and domestic science, through all day, part time, continuation and evening schools. This work is to be carried on either in special schools or in departments of regular high schools. In every case, the local control is vested in the regular board of education for the community, and the laws are to be administered, as a whole, by the state board of education.

An "approved school or department" is defined to mean an organisation under a separate director or head. The courses, pupils and teachers must be approved by the state board of education. When the approved work is given under the same roof with other public school activities, the work remains separate in order that it may realise its dominant purpose of fitting for wage earning.

The instruction which is to receive state aid is to be of less than college grade and designed to meet the vocational needs of children over fourteen years of age who seek preparation for their work, most of whom come to the vocational schools without having finished the elementary school course. Attendance upon such day or part time classes is restricted to persons over fourteen and under twenty-five years of age; and upon evening classes to persons over seventeen years of age. The state board of education, which is charged with the administration of the Act, has been reorganised so that seven of its members must be professional educators and five may be laymen. Two of these laymen must be citizens of prominence, three of whom shall be actively interested in vocational education and in sympathy with it. One of these last three shall be a representative of employees and one of employers.

The state superintendent of public instruction is made the executive officer and a deputy superintendent is placed under him in charge of industrial and domestic science education. The agricultural work is carried on by another deputy or agent who combines with his duties as assistant at Perdue University, the Agricultural and Mechanical College of the State, the supervision of the agricultural education under the state superintendent.

Local communities are required to supply the plant and equipment for carrying on the work, which, when it has been approved by the state board of education, is to be reimbursed out of the state treasury to the amount of two-thirds the salary of each teacher giving instruction either in vocational or technical subjects.

In order to secure the benefit of the knowledge and co-operation of the laymen, local school authorities are required to appoint, subject to the approval of the state board of education, advisory committees composed of members representing local trades and industries, whose duty it shall be to counsel with and advise the board and other officials in the conduct of the affairs of the school.

PART TIME SCHOOLS.

THE BEVERLY INDUSTRIAL SCHOOL.

The initial impulse that led to the establishment of this school arose from a purpose to promote the social betterment of the large number of young people who leave school in the later grammar school or earlier high school grades, having little or no specific preparation for earning a livelihood and little immediate wealth-producing ability in any direction. The law allows pupils to work at fourteen. Most skilled industries do not want them until sixteen or eighteen. The lack of even the most elementary mechanical skill and experience, the inability to apply effectively to the practical problems of a particular industry, even the most elementary knowledge of drawing, arithmetic and English, and the two easily accessible blind alleys of temporary employment at unskilled occupations; all these conditions tended to prevent the ready entrance of these young recruits into the skilled industries. This school had its inception in an effort to find some way of enabling at least a few young men to better their condition.

The actual realisation of this purpose became possible through the co-operation of Mr. M. B. Kaven and his associates in the management of the United Shoe Machinery Company. These men were actuated by a purpose to promote on a broad and equitable basis any plan that tended to provide a proper supply of competent journeymen mechanics who should possess the necessary all around skill and experience for constructing experimental machines. It was no part of their purpose, it was avowed, to make foremen, engineers or inventors or to provide an excess of workmen to take the place of present employees at a reduced wage. The purpose, as in the lower industrial schools of Germany, was to fill up the "rank and file," not to provide "officers of the line."

The pupil entering the Beverly Industrial School must have reached the age of fourteen and have completed the sixth year or grade of the elementary schools. He must also obtain from the school physician a certificate to the effect that he is physically able to perform the work to be undertaken. Many of the pupils have completed the elementary school (eight years) and some have taken one or two years in the high school. The ages vary from fourteen to eighteen, but sixteen is considered the most favourable age for undertaking this work and the end of the tenth year in school (second year of high school), the most favourable place in the public school curriculum. Only those have been received who, after a full understanding and consultation with parents, have expressed the desire to enter with the determination to stay until they have learned the machinist's trade, and who appeared physically and mentally fit to undertake this task.

The school was indebted to the Fitchburg plan and the University of Cincinnati for the half time idea which was adopted from the start.

The students are in two divisions, "A" and "B," alternating each week in shop and school work, so that while "A" is in the school room, "B" is in the machine shop; and the next week the order is reversed. The divisions are likewise subdivided into groups on the basis of ability to carry on the regular studies; these groups alternate in attendance at the high school laboratories for chemistry and physics.

Each division is assigned to a machinist instructor, who continues with it in both school room and shop. In addition there is a shop instructor who is always in the shop, and thus comes into contact with both divisions.

This arrangement makes sure that the instructors will never lose the viewpoint of the shop, and is a guarantee of practical correlation between shop and school room. In this respect the school is unique among industrial schools.

The director is supervisor of the entire work, and is free from much teaching duty so as to give time to administration, discipline, counsel and stimulus to individual boys, and proper correlation of work.

In the shop, the students work making parts of machines, the job of each boy being chosen both with regard to his ability and further training. The work goes to the inspector, and if satisfactory, is sent on for other operations or goes to the stock room, exactly like the product of any other workman; if unsatisfactory, the work is either returned to be made right or is sent to the scrap heap.

From the beginning the boy is doing his work under actual shop conditions and on a commercial product, but is directed and taught by trained instructors. No work is given simply as an "exercise," but, on the other hand, the boy is not exploited for the benefit of the factory.

Students are paid one-half the usual piece price paid in the factory for that particular operation. The other half goes to the factory as part recompense for the material used, the overhead expense of heat, light, power, investment in machinery and tools, and payment of the salaries of instructors while doing shop work.

The school is distinctively vocational and industrial. At present the training given is for employment as machinist or draftsman, but as other fields open the school will fit boys to enter these.

Although training for the industry which the boy expects to enter is kept in the foreground, the school never loses sight of the fact that the boy is a "citizen in training." It seeks to develop the *man* as well as the *machinist*. From the standpoint of workmanship it seeks to develop in its students:

Initiative.—To set up his work and go at it without waiting for others.

Resourcefulness.—To do his work with whatever tools he has; to find the best way of doing things or a new and better way of doing old things.

Conscientiousness.—To do his best for the sake of honest workmanship and not to be a time server.

From the standpoint of citizenship it seeks to develop the same good qualities as apply to his social and civic duties.

The course of study is correlated with the shop work as the major centre of correlation, and with the pupil's duties to himself and society as the minor centre of correlation. The aim has been to try to understand the needs of these particular boys in relation to the work they are to do and to provide for these needs in the most direct way possible. The length of the course varies greatly with the ability of the pupil. Much of the instruction tends to become individual, and it has been found feasible to admit new pupils at any time in the year.

EARNINGS OF STUDENTS.

Persistent effort has been put forth to increase the output of work, and at the same time decrease the work returned for correction or for the junk heap. The result has been satisfactory. The wages received by the boys during the first twenty-two weeks of this year and compared with corresponding groups of a year ago are here given, the figures being for the boy's share, or one-half of his actual earnings.

	Total	Hours worked	Rate per hour
First year boys:			
This year.........	$531.62	9,528	5.58 cents
Last year......	236.27	6,643	3.55 "
Second year boys:			
This year.........	$399.82	6,561	6.09 "
Last year.........	1,038.39	21,275.5	4.88 "
Third year boys:			
(Not including full time boys)			
This year.........	$1,100.17	14,101	7.8 "
Combined first and second year boys:			
This year.........	$931.44	16,089	5.78 "
Last year.........	1,274.66	27,918.5	4.56 "
All except full time boys.			
This year.........	$2,031.61	30,190	6.73 "
Last year.......	3,385.41	55,732.75	6.07 "

Expressed in another way: the new boys are earning one dollar a week more than the new boys of a year ago, and the second year boys are earning sixty cents a week more than the similar group. In terms of a fifty-hour week, the school for twenty-two weeks has averaged $3.37 per boy as against $3.04 for last year's fifty-week period.

There is no definite time limit set for the completion of the course. When boys are considered fit to be tested out in the factory, they will be sent out without regard to the length of time spent in the school room and shop.

TECHNICAL HIGH SCHOOLS.

CLEVELAND.

This school was organised in 1908 on recommendation of an educational commission appointed by the president of the board of education "to examine carefully the government, supervision and course of study of the Cleveland schools and make suggestions."

It was planned to accommodate fifteen hundred pupils and equipped to give courses in drawing, wood turning, cabinet making, pattern making, foundry work, forging, machine shop practice, printing, pottery, household art and science, dressmaking and millinery. Courses of science related to the foregoing were organised for each department along with related English and mathematics.

The object of the school was announced to be the preparation of both boys and girls for a definite vocation, and to help men and women already engaged in a vocation to better their condition by increasing their technical knowledge and skill.

The school is not primarily a preparatory school for college, but as some 30 per cent. of the pupils who graduate wish to carry their technical education further, students are not limited in their outlook when they enter the technical high school. The course has been so arranged that a differentiation may take place at the end of the second year, and the pupils intending to enter a technical college can secure the proper preparation. Thus far graduates from this school have been accepted upon certificate at Case School of Applied Science, Columbia University, Purdue University, Ohio State University, Carnegie Technical Schools, University of Michigan and several other institutions having technical courses.

When this school was opened over seven hundred pupils at once enrolled themselves. Of these, one hundred and twenty-three came from high schools in the city. The remaining six hundred were pupils, who, but for the courses offered in the new school, would not have carried their education beyond the elementary grades, thus verifying the prediction that the school would find its own field in a high school population whose wants had hitherto been unmet. Over fifteen hundred pupils, more than the school was planned to accommodate, are now in attendance, and the attendance at the academic high schools has not fallen off. The courses are planned for terms of twelve weeks each, and the school is in operation four terms per year, with a vacation of one week at the close of each term. Twelve terms constitute the full course, which may thus be completed in three years by students who attend continuously. The advantage claimed for this arrangement is that by eliminating the long summer vacation, a saving of an entire year in the usual high school course is made possible. This is of great advantage to the student who for any reason may wish to secure a maximum of education in a minimum of time. Those who do not wish to avail themselves of this advantage, or whose physical condition does not permit of the strain of continuous study, still have the opportunity of devoting four full years to their high school course.

The plan of a continuous session broken up into short terms is also of advantage to the student who from any cause fails in some part of his work, since by these frequent opportunities for readjustment he is given a chance to "catch up" again and go on with his work in a new class with comparative little loss of time. In the summer of 1910 over 50 per cent. of the students enrolled were in attendance, showing that parents and pupils appreciate the new arrangement.

The courses are so arranged that elementary instruction in several industries is given during the first two years. This gives general manual training and enables the students to find their aptitudes. In the last two years they must specialise in some one department. The courses given include the following: English, mathematics, industrial geography, botany and physiology, chemistry for girls, chemistry for boys, history, German, mechanical drawing, applied arts, domestic art, millinery, domestic science, physics, shop work, printing.

One of the most important missions of this school is the betterment of people already engaged in a given vocation. The abolition of the apprenticeship system in the subdivision of manufacturing processes has made it practically impossible for mechanics to secure any general training which will increase their efficiency and consequently their earning power in their present position or enable them to fit themselves for a better position. There is a crying need among semi-fitted working classes of an opportunity for industrial education, and to meet this need the technical high school offers trade courses during the evening to men and women already employed during the day.

The evening sessions are from 7.15 to 9.15 p.m. The classes are divided into two sections, one meeting Monday and Thursday evenings, another meeting Tuesday and Friday evenings.

The entire equipment used for technical instruction in the day school is available for the evening classes. Instruction is offered to men in carpentry, cabinet making, pattern making, foundry practice, tool forging, sheet metal work and machine shop practice. Allied with these subjects is instruction offered in trade mathematics, English, applied mechanical drawing, including architectural and machine drawing. Complete courses in plain and hand sewing, machine sewing, spring and fall millinery and the applied arts are available to women. Plain cooking and whatever allied courses may be called for by a sufficient number are also within the scope of the night school. Freehand drawing, charcoal and water colour rendering, clay modelling, bookbinding, leather work, art metal work and design as applied to the crafts are also offered.

CO-OPERATIVE INDUSTRIAL SCHOOLS.

FITCHBURG HIGH SCHOOL.

In connection with the engineering department of the University of Cincinnati, a system of co-operation has been established between the University and the shops of the city, under which the shop takes charge of the practical training of the students and the University of the theory. The plan adopted was discussed in April, 1908, at a meeting of metal manufacturers in New York City. Some Fitchburg manufacturers were present and were greatly impressed with the advantages of such a system. On their return to Fitchburg a plan was drawn up by the manufacturers of that city for a combination shop and school course and presented to the school board, with an offer of the use of their shops for the practical instruction of apprentices, if the school would provide the necessary theoretical and academic instruction. This proposal the school board accepted, and the following local industries now provide the shop work: saws and knives, steam engines, grinding machinery, pumping machinery, special and woodworking machinery, lathes, planers, railway tools and general machinery.

CURRICULUM.

The course is one of five elective high school courses, and is known by the name of the "Co-operative Industrial Course." The boys receive instruction in the shops during one week and in the school the next week. Last session 100 attended, and the cost of the special salaries was $3,400. The course covers four years, as follows:

The figures in brackets are the number of hours a week.

First Year—*All school work:* English and current events (5), arithmetic, tables and simple shop problems (5), algebra (5), freehand and mechanical drawing and bench work (8).

Second Year—*School and shop work:* English (5), shop mathematics, algebra and geometry (5), physics (4), civics (2), mechanism of machines (5), freehand and mechanical drawing (6).

Third Year—*School and shop work:* English (5), shop mathematics (5), chemistry (4), physics (4), mechanism of machines (5), first aid to injured (1), freehand and mechanical drawing (6).

Fourth Year—*School and shop work:* English (5), commercial geography and business methods (2), shop mathematics (4), mechanism of machines (4), physics, electricity and heat (4), chemistry (6), freehand and mechanical drawing (5).

CO-OPERATIVE PLAN.

The course is a form of the apprenticeship system under which the manufacturer takes the boys in pairs, so that by alternating they have one of the pair always in the shop and one of the pair always in the school. The course is an elective one which any boy regularly admitted to the high school may take with the approval of his parents. Each Saturday morning at eleven the boy who has been at school goes to the shop and finds out what particular job his alternate has been working on, in order that he may take up the work without delay the next Monday morning.

Since the school term is only twenty weeks a year, only such subjects are taken up as are of practical value to the student. Throughout the four years, the object in English is to enable the students to speak and write intelligently. Familiarity with shop terms and their significance is an important factor of the work. For this purpose, the teacher of the English department makes a special study of the English the course requires.

Current events and industrial history, the daily happenings in the industrial world; the history of the iron industry, factory systems and labour problems; new inventions, and the reading of the mechanic journals are included in the course. The mathematics deal with simple problems in mensuration, fractions, metric system, circular measure, followed by problems in cutting speeds and feeds, belting, gearing, strength of materials and general cost figuring. Algebra is taken up to give facility in using the formulæ common in trade journals and hand books, and in understanding simple geometric and trigonometric formulae. Under mechanism are taken up construction and uses of the various machine tools. The names and uses of every part are learned in the school, as well as in the shop, with the reason for the shapes of the various parts, the kind of material used and their construction, etc. In physics, working problems are emphasised rather than theories; and in chemistry, the nature and qualities of metals and salts, tests that can be applied to fractured metals, hardening and tempering processes. The commercial geography comprises the study of the sources of supply of the various industries, the preparation and methods of transportation, cost of materials, railway systems, water ways, etc. Under business methods is taken up the organisation of shop systems, including the receiving of materials, laying out of work, tagging, inspecting and routing of work throughout the shop; also general office systems. Drawing is, of course, emphasised. Civics and history are essentials of good citizenship, and a careful study is made of the forms of city and state government.

The shop work consists of instruction in the operation of lathes, planes, drilling machines, bench and floor work, and such other machine work, according to the period of the apprenticeship, as pertains to the particular branch of manufacture in the shop where the boy is employed. The boys receive compensation for their services during the week they are in the shops, at the following rates:

For the first year 10 cents an hour, the second 11 cents an hour, and the third 12½ cents an hour; that is, $5.50 a week or $165.00 for the first year; $6.05 a week, or $181 for the second year; and $6.78 a week, or $206.25 for the third year; a total of $552.75 for the three years. These rates it may be mentioned are higher than the former apprentices have been receiving, the manufacturers having raised the scale of their own accord. The wage scale becomes operative on the first of July, when the boys enter upon a trial period of two months. All of the class begin work at this date, a few weeks' vacation being allowed in July or August. The division into pairs is made at the opening of the fall term in September. Every student is given a trial period of two months, beginning immediately at the close of school in June. If it turns out that he has no aptitude or liking for a trade, he takes up some other course in the high school. During this trial period he has the opportunity of finding out what occupation will suit him.

Locally the plan seems to have strong support. It is claimed that it presents a strong inducement for the boy to remain in school. He can earn some money; in fact, he can earn more than he could by going out and taking the ordinary jobs in stores and offices that would be available. Moreover, the payment for the shop work enables parents of limited means to keep their children in school longer than under the usual conditions. It may be added that where there is a vacation week in school, the shops provide work so that the boy is kept off the street.

What is regarded as a strong feature of this co-operative plan is the contract entered into by the boy and his employer.

Philanthropic and social workers, and organised labour in particular, are strongly opposed to this form of co-operative plan, chiefly on the ground that the manufacturer selects and controls the boy and that it does not give equal rights to everyone. A committee of the American Federation of Labour reported in 1910 at its meeting in Toronto, that there is justification in condemning any system of public instruction privately controlled, or any scheme of private selection of pupils, and calls attention to the fact that such a plan is being fostered by manufacturers' associations.

The following are the rules and conditions under which special apprentices taking the four years' co-operative industrial course are received for instruction at the works; also, the apprenticeship agreement in which the parties are the apprentice, his parent or guardian and the employer:

RULES AND CONDITIONS.

1. The applicant for apprenticeship under this agreement must have satisfactorily met requirements for entrance to this course at the high school.

2. The apprentice is to work for us continuously, well and faithfully, under such rules and regulations as may prevail, at the works of the above company, for the term of approximately 4,950 hours, commencing with the acceptance of this agreement in such capacity and on such work as specified below:

Lathe work, planer work, drilling, bench and floor work, and such other machine work according to the capability of the apprentice as pertains to our branch of manufacturing.

This arrangement of work to be binding unless changed by mutual agreement of all parties to this contract.

3. The apprentice shall report to his employer for work every alternate week when the high school is in session and on all working days when the high school is not in session, except during vacation periods provided below, and he shall be paid only for actual time at such work.

4. The apprentice is to have a vacation, without pay, of two weeks each year, during school vacation.

5. The employer reserves the right to suspend regular work wholly, or in part, at any time it may be deemed necessary, and agrees to provide under ordinary conditions other work at the regular rate of pay for the apprentice during such period.

6. Should the conduct or work of the apprentice not be satisfactory to employer or to the high school authority he may be dismissed or suspended for a time at any time without previous notice. The first two months of the apprentice's shop work are considered a trial time.

7. Lost time shall be made up before the expiration of each year at the rate of wages paid during said year, and no year of service shall commence till after all lost time by the apprentice in the preceding year shall have been fully made up.

8. The apprentice must purchase from time to time such tools as may be required for doing rapid and accurate work.

9. The said term of approximately 4,950 hours (three year's shop term), shall be divided into three periods as stated below, and the compensation shall be as follows, payable on regular pay days to each apprentice:

For the first period of approximately 1,650 hours, 10 cents per hour.
For the second period of approximately 1,650 hours, 11 cents per hour.
For the third period of approximately 1,650 hours, 12½ cents per hour.

10. The above wage scale shall begin the first day of July preceding the apprentice's entrance upon the first year of shop work of the high school industrial course.

The satisfactory fulfilment of the conditions of this contract leads to a diploma, to be conferred upon the apprentice by the school board of Fitchburg upon his graduation, which diploma shall bear the signature of an officer of the company with which he served his apprenticeship.

TRADE SCHOOLS.

MILWAUKEE SCHOOL OF TRADES, WISCONSIN.

Under an Act of the Legislature of the State of Wisconsin, the Milwaukee School of Trades, which had been founded in 1906 by the Merchants' and Manufacturers' Association, became part of the school system of the city in July, 1907, at which date the Act came into force. This school is the first trade school in the United States to be sustained by a special municipal tax levied for industrial education. It provides instruction for young men between the ages of sixteen and twenty in the practice and fundamental principles of the manufacturing and building trades. The school does not claim to turn out journeymen. Its aim is to instruct its students so that on graduation they may be of practical value to their employers and receive fair remuneration. Each course is intended to be the equivalent of an apprenticeship of four years. For each trade the course is a two years' one of fifty-two weeks per year and forty-four hours per week, except in the case of the plumbing trade, for which half the above time is required. Early in the present year a School of Trades for girls was also established.

The equipment is of the factory character. Besides shops and class rooms for the different trades, an "Exhibit Room" is provided which contains samples of the work of interest and value in each trade. This feature of the equipment is especially valuable affording, as it does, an object lesson to persons who have not yet chosen their vocation.

Instruction is provided in pattern-making, machinist and tool making, carpentry and joinery, plumbing and gas fitting. Moreover, its prospectus states that when a sufficient number present themselves to form a class, instruction in other trades will be provided.

The school aims at placing the student in conditions as nearly as possible like those he will meet in actual practice. The hours are accordingly from 8 to 12 and from 1 to 5 daily except Saturday. On Saturday there is a session from 8 to 12. The evening classes are from 7.30 to 9.30 four days a week from October 1 to April 30. The course of instruction in each trade includes the following branches:

1. Shop practice and trade lectures;
2. Drawing—freehand, mechanical; isometric, problems in design, architectural.
3. Workshop mathematics—arithmetic, algebra, geometry, trigonometry.
4. Shop inspection trips—In connection with each trip a carefully written report must be submitted.
5. Practical talks and lectures on subjects connected with each trade and topics fundamental to all trades.

About one-fourth of the student's time is devoted to academic instruction incidental to his trade, the remainder of the time being spent in actual shop practice. The school, however, provides no cultural classes.

To qualify for admission, the students must be sixteen and be able to read and write English and perform the fundamental operations of arithmetic. Special preparatory classes in the city high schools are in contemplation. At present boys below sixteen and in attendance at the high schools are allowed to pursue those studies which will be most helpful to them when they enter the School of Trades.

The evening classes supplement the experience of apprentices and workmen who are employed during the day, but the course is such that none except students of unusual ability can serve the entire school apprenticeship in evening classes alone.

The cost of maintenance is approximately $225 a year for each pupil. For residents of Milwaukee who are not over twenty years of age, the school is free. For all others the day classes are $15 a month, and the evening classes $4. Students receiving free tuition are charged for the materials used in their trades as follows:

Day pupils in pattern making, machinist, tool making and wood turning trades, $4 per month.

Day pupils in plumbing and gas fitting trade, $5 per month.

All students admitted are considered to be on one month's probation, but if necessary, a longer period may be allowed.

The school is under the immediate control of an advisory committee called "The Committee on Trade Schools," as provided in the Act.

THE STOUT INSTITUTE.

This institution, located at Menomonie, Wisconsin, is undoubtedly in the foremost rank of schools in the United States attempting to associate industrial with general training from an early stage in the school course and carrying it on with increasing tendencies to specialisation in the high school. The school provides courses in manual training, elementary mechanical drawing, projection drawing, machine drafting, architectural drawing, manual training design, freehand drawing, elementary wood work, upper grade wood work, joinery, wood turning, wood finishing, elementary pattern making, cabinet making, carpentry, mill work forging, machine work, foundry practice, brick laying, cement work, plumbing, mill wrighting, paper and cardboard construction, including weaving, basketry, bent iron and clay, special shop work, including tinsmithing and home repair work and printing.

An adjustment has recently been made in the manual training department and provision is now made to meet the demands of those teachers who wish to specialise in the various lines of industrial education. This specialised instruction is divided into two groups: those which aim specially at the building trades, and those which aim at the machine trades. As a preparation for the building trades' courses are offered in architectural drawing, carpentry, mill work, cabinet making, plumbing and masonry. The architectural drawing is eminently practical and concerns itself especially with details of construction and complete working plans for simple frame buildings. The course is closely related to the course in carpentry which requires the building of actual cottages. In one or more cases, the cottages will be completely fitted with the necessary chimneys, fireplaces and all plumbing connections. While the students in carpentry are given this opportunity to carry out practical work they will also concern themselves with such exercises arranged in definite sequence as shall give each individual an adequate understanding of the fundamental principles which the carpenter in nearly every instance must meet. Lecture work, notes, references and visits to such building operations as may be available in the vicinity will give the course a somewhat broader basis for its limited field of work.

In the group of machine trades, students are given an opportunity to specialise along one or more of the following lines: machine drawing, pattern making, foundry practice, forging and machine shop practice. The work in machine drawing and machine shop practice has already begun to take on aspects of specialisation, but considerable emphasis will also be given during the coming year to pattern making, foundry practice and forging. The details of these lines of work are so adjusted that a student may prepare himself to handle any one, or to take charge of such of them as are more closely related either in thought or in the practical handling of the work of the shops.

Of the lines of the work not directly connected with the building or machine trades, certain ones furnish an opportunity for some specialisation. Equipment for printing was installed in 1912, and students are given an opportunity to prepare themselves for teaching this line of work in schools. There is an increasing demand for printing as a branch of the school arts and it is believed that it is to have a large future in the development of industrial education. While the school offers the branch as one among many lines for the teacher who is to handle several branches, it also offers facilities for specialisation.

There is also included a home economics department which makes provision for instruction in foods and cookery, food study, elementary and advanced cookery, and dietetics.

The courses in sewing have a two-fold purpose, the first being to present a systematic, well-developed course of instruction that shall develop judgment and skill on the part of the student. The second purpose is professional, being to give a content from which courses of study may be organised and to show the development of the subject matter, its teaching possibilities, methods of presentation, and class management. The complete course includes model sewing, plain sewing, dressmaking and art needlework.

In order that students may understand the professional as well as the practical and economic bearing of such subjects as are undertaken, the following general topics are provided for: psychology and pedagogy, observation and practice teaching, a study of the organisation and management of classes, and of the organisation of courses of study and planning of equipment.

There is also in connection with the Institute a department called the "Homemakers' School," which is maintained for the purpose of preparing young women who do not wish to teach, for the responsibilities of homemakers.

There is also the trades school which makes special provision for the plumbing and bricklaying trades and is organised to meet the demands for men in the trades who possess the necessary technical knowledge and skill in applying that knowledge through modern methods of construction work.

POLYTECHNIC HIGH SCHOOL, LOS ANGELES.

In the educational system of California the strong hold which the departments of manual training and domestic science have is worthy of note. The high schools of Los Angeles are represented as having a two-fold purpose: (1) To give boys and girls opportunity to fit themselves for the immediate duties of life through the development of their mental moral and physical powers and their social natures as manifested in a thorough English education; (2) to give those who desire to enter business immediately upon leaving the high school, or those who wish to enter their life work through the avenues opened by the colleges, universities, technical schools and art institutes the largest possible assistance through courses of study and units of work especially arranged for them.

The economic and social results effected by the Polytechnic High School are of special importance. This school is very largely concerned with the general education of a technical sort and to prepare students for the various industrial activities of a skilled character by which people earn a livelihood. It also prepares for universities and for technical and art schools as well. Here men are trained to take service in the wood work departments of the elementary schools. A large number of courses are offered, amongst which may be mentioned the following: commerce, domestic economics, electrical engineering, mineralogy, surveying, art, mechanical draughting, architecture, normal course in manual training, industrial, dressmaking and millinery, chemistry and mechanical engineering.

In the industrial work a distinction is made between trade instruction and industrial training. A trade school has been recently established in connection with a high school for Grades VII and VIII of the public schools. This meets the needs of those children whose parents are absolutely unable to afford them the advantages of the high school course. It attempts to supplement English already taught and to impart such essentials in arithmetic and general information as the particular trade requires. The hope is that the same result may be produced for the public schools that has been effected by the present high schools, namely, to keep children to the end of the grammar course as the new high school retains the great majority of those enrolled till graduation.

The industrial idea as distinct from the trade idea is to impart that knowledge of and skill in the common operations of various manual occupations that will give a youth a broad view of the related field of industries with somewhat greater emphasis on the line he selects as his special study. For example, if a boy wishes to follow pattern making, his work for the first year will be divided between six months in the wood shop followed by six months at the lathe, with mechanical drawing continued through both terms. The following year he will be required to take six months in turning and pattern making followed by six months in the foundry with the mechanical drawing continued. At the end of this time he is ready to specialise on his pattern making and freehand drawing, which he does for the remaining two years of his course. He is thus introduced into the difficulties that confront the draftsman, the carpenter, the turner, the foundryman as each of these attempts to carry out his designs. In addition to this industrial work which takes about 50 per cent. of his school time, he is required to take two years of English, a year of algebra and a term in each of the following: arithmetic, spelling, commercial law, physiology, economics and American history or civics. In science he is required to take a year in physics and in chemistry. These, with the obligatory gymnasium training and the usual choice of music or oral English, give the boy a broad foundation. This will tend to serve as a fair sample of the breadth of the course given.

In order to prevent the danger of turning out mere industrial leaders who lack the ideals imparted in the traditional school, much attention is given to English, music, etc. The authorities recognise the importance of broadening the course as much as possible and insist on attention being given to those subjects which are regarded as purely cultural.

The spirit of helpfulness at this high school is noteworthy and the statement is frequently made, "Think of what the school is doing for you—what can you give in return?"

The students in architecture have planned a commodious art building and this is being decorated by those who take the course in the applied arts schools. The woodworkers have in their enthusiasm taken upon themselves to erect a fence on the school grounds while many of the repairs for the different schools are accomplished in the shop by the boys.

There are many features in connection with the Polytechnica High School which would deserve careful study by those interested in industrial training.

GERMAN INDUSTRIAL EDUCATION.

In view of what Germany has done in the way of adapting industrial education to the needs of the people, it is thought advisable to insert in the report matter that may be of assistance in understanding the principles underlying their system of industrial education.

The following extracts are taken from Bulletin No. 19, 1913, of the United States Bureau of Education.

(*a*) THE SYSTEM OF INDUSTRIAL SCHOOLS IN GERMANY.

All German children are required by law to attend the common school (Volkschule), or an accepted substitute, from the age of six or seven to that of fourteen years. This common school is much like our own, differing chiefly in that religion is given a prominent place, and a slight fee is charged; it is divided into separate classes, though with equally good teachers, for pupils of different pecuniary rank (by charging different school fees); and like German schools in general, teaches fewer subjects than we do, but these with greater thoroughness. Some common schools offer prevocational work, such as elementary drawing and work in paper, basketry, wood and iron (for boys), sewing and cooking (for girls). At his tenth year, the parents of a boy in the common school must decide whether he is to continue his schooling beyond the compulsory attendance in that school. If so, he will leave the common school at once and enter one of a number of types of school which offer themselves. If he is to be classically trained (with both Greek and Latin) he will enter the Progymnasium for its six-year or the Gymnasium for its nine-year course. If his training is to be semi-classical (including Latin, but not Greek), the Realprogymnasium offers him a six-year, and the Realgymnasium, a nine-year course. If a liberal or modern training is desired he will enter the Realschule for a six-year or the Ober-realschule for a nine-year course. Of these, in turn, all the nine-year courses admit to the appropriate faculties of the universities and to the technical and commercial high schools. The six-year courses are largely attended and completed, for the reason that their completion (or six years in a nine-year school) and the passage of an examination are rewarded by the one-year volunteer army certificate, by which the obligation to serve two years in the army is commuted to service for one year only, as a volunteer, and with the chance to become an officer. These courses are also prerequisite to entrance into many of the higher schools (hohere Schulen) of various sorts, commercial, technical and engineering.

Of distinctly industrial schools there is a great body, with the scientific technical high schools at the summit. These schools are about the equivalent of our best colleges and university departments of engineering and other applied sciences. They train the technical leaders of industry. In them, probably more than in our universities, scientific investigation is given a very important place. Below them stand the middle technical and trade schools, of which there are many sorts: Mining schools, building schools, textile schools, schools of machinery, and other schools for the metal industry, industrial art schools, and other lesser groups. These middle schools are of two main types, the higher and the lower.

The higher middle technical schools are designed to train leaders of industry, but with a less thorough preparation than that offered by the technical high schools. As a rule, they require the completion of a six-year general course, such as secures the one-year military certificate, and at least two years of practical work in the student's trade. They are probably the approximate equivalent of our technical school, colleges, and universities of less exacting standards. In them about two-thirds of the engineers of Germany are trained, only about one-third coming from the technical high schools.

The lower middle technical schools are designed chiefly for the training of practical working master tradesmen, technicians of lower grade, for supplementary training of foremen (who generally rise from the ranks), and the like. They require for entrance several years' practice of the trade to be studied and throughout their work emphasise the practical side. In Prussia, the technical middle schools, higher and lower, are more fully developed than in south Germany. The industrial art schools are a special type, in that they train those engaged in many different trades and industries in the application of art and of design to their several trades.

Of all those engaged in industry, only a small minority attend any of the above-mentioned schools. Nor in these schools do we find such great differences from our own technical schools of various grades. It is in the industrial schools for the masses of workers that Germany excels and with respect to these schools that we have most to learn from her. These, the lower industrial schools, are of two main sorts, day trade schools and improvement schools. The relations of some of these schools to each other and to other schools are often exceedingly close. They may use the same building, have the same teachers, and the same management and support. Where there are but few workshop facilities available, or where the improvement schools utilise workshops also, instruction in the lower trade schools may differ but little from that of the improvement schools, except as to length. But throughout Germany, the attendance at day trade schools is but a fraction of that at improvement schools. This is because few boys who go into industry as ordinary workmen can afford to study so long without earning, and because there is ordinarily no necessity for so doing by reason of the training to be received as an apprentice and in industrial improvement schools. There is also, as we shall see, serious question by many employers in industry as to the advisability of such schools for the training of the rank and file of workers. As a general rule, these lower trade schools for workmen do not constitute substitutes for apprenticeship; but a few such schools, according to Dr. Kerschensteiner, for wrought iron workers, machine builders, joiners, weavers, plumbers, etc., do take the place of apprenticeship.

The type of school which supplies the great bulk of the training of the mass of workers, supplementary to the training derived from their work itself, is the industrial improvement school. In this school the majority of workers receive their first and only industrial training imparted by any school. German improvement schools are now of three forms: General, industrial and commercial. These schools, as we have seen above, were originally all general schools and of a type which aimed merely to continue and perhaps slightly expand the common school training. Such schools are now becoming a less and less important part of all Fortbildungsschulen, and are also adding new subjects to their curricula, as civics, hygiene, studies of transportation, etc. Their organisation varies from place to place. In some important cities there is no such school, and such few general classes as are held are a part of the industrial improvement school. The recent great growth of the industrial schools is a striking fact. Those youths engaged in industry attend the industrial, and those in commerce, the commercial improvement school; whether attendance is compulsory or voluntary, youths naturally attend the schools organised for their type of occupation.

By the National Industrial Law, established in 1891, compulsory attendance was provided for, and the improvement schools thus greatly prospered. This law provides as follows:

> The undertakers of industry must allow to their workers under eighteen years of age who attend an institution for instruction recognised by the community authorities or by the state as an improvement school the necessary time for this purpose; as specified by the appropriate authorities. The instruction may be on Sunday only, when the hours of instruction are so set that the pupils are not hindered by them from attending the chief religious service, or a service of their confession especially established for them with the consent of the religious authorities. Institutions in which instruction in woman's hand and house work is given are improvement schools in the intention of these regulations.
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> A community or a wider union of communities (Kommunalverbandes) may, by national statutory regulations, so far as regulations are not established by the separate States, require the attendance at an improvement school of male workers under eighteen years, as well as of female commercial clerks (Handlungsgehilfen) and female apprentices under eighteen years. In the same manner the necessary regulations may be made for the enforcing of this obligation. In special, regulations may be made by statutory provisions to insure a regular school attendance, as well as to regulate the duties of parents, guardians and employers. These regulations and suitable deportment may be enforced in the improvement school. Those individuals are freed from the statutory obligation to attend an improvement school who attend a guild or other improvement or trade school, so far as the instruction of these schools is recognised by the higher administrative authorities as an adequate substitute for that of the general improvement schools.

The several German States have reserved to themselves the full regulations of their school affairs and so the above national law has no compulsory force and is permissive only. Great results have, notwithstanding, followed it; for in those States which have no law regulating improvement schools the national law, in conjunction with ocal ordinances, has in many localities provided compulsory attendance. The national law and the compulsory attendance provided under it for some schools has also served as an example to the States, and has stimulated them also to legislate for compulsory attendance. On the basis of the national law and local ordinance, where such local ordinance exists, employers must allow time for the school attendance even of those workers who attend voluntarily. The national law further provides that in localities where a trade school recognised by the state or communal authorities exists the obligation of the employer to insure time to his youthful workers to attend a school recognised as an improvement school (as section 120 above) applies to such trade schools also. The manager (Geschaftsinhaber) must hold his apprentices and journeymen under eighteen years to attendance on the improvement and trade schools and must watch over their attendance. These provisions (in sections 120 and 139c) are enforceable against employers or parents by a fine not to exceed 20 marks ($4.80), or in case of inability to pay, by imprisonment not to exceed three days for each infringement.

The industrial improvement schools are generally not to be called trade schools. Few throughout the country have many workshops, and none, or practically none of them, attempt to act as substitutes for apprenticeship. They are technical schools seeking to impart the "why" and "how" of the trades, or part technical, part general schools. We shall see more fully in the succeeding chapters of what nature these schools are and what results they are accomplishing. Throughout, let it not be forgotten that these schools merely supplement, and aim merely to supplement, the training received in apprenticeship, even though this service be highly important.

After the industrial schools of various types had been established, the State followed the example of the individuals and groups who had founded them and founded or aided in the founding of similar schools and obtained year by year more and more control over all these schools. This was largely done by means of providing subsidies for the industrial schools, to obtain which they must meet certain requirements with regard to grade and kind of work and the like, and submit to certain supervision. Inspectors enforce the State requirements. Thus the State tends to unify and standardise these schools, as well as to add greatly to their available funds. Certain modes of support are typical, though particular arrangements vary greatly from place to place and school to school. Distinctly local schools are usually supported chiefly by the community with aid from State subsidies (except, usually, in case of improvement schools), while guilds, associations and unions often contribute lesser amounts (though in some cases a large share). The higher schools receive usually large State support on account of their service to a wide district. The boards of directors include in most cases representatives of the industries concerned, or some of them (usually guild members), city officials and representatives of any other contributors.

The State administration and supervision has been vested both under departments or ministries of education and those for commerce and industry. The result of many experiments and repeated changes is in most cases the supervision of the industrial schools by a different body from that set over the other schools and one representing the interests of industry. Only thus, it was found, could the industrial schools be kept from becoming academic true to their name and purpose, and be made practical and adjusted to the changing needs of industry. Co-operation, in the form of assistance and advice, of the educational authorities was found essential, however, to efficient operation of the schools, and this is now usual.

Industrial schools for girls and women are still greatly lacking. Housekeeping schools and schools training for women's industries, as millinery, dressmaking, etc., and for domestic service, are found in many places. Commercial schools are one of the most numerous classes of schools for girls, while general improvement schools exist in many places. The present tendencies toward more improvement schools for girls are directed more toward the establishment of commercial than of industrial schools. There is probably today greater need in Germany for industrial schools for girls and appropriate compulsory attendance on them than for any other advance in industrial education.

APPENDIX

SCHOOLS VISITED.

The following colleges and schools have been visited either by individual members of the Commission or by sub-committees:

Agricultural Colleges and High Schools:
- Guelph Agricultural College.
- Manitoba Agricultural College.
- Saskatoon College of Agriculture.
- Michigan State Agricultural College.
- Hoenheim Agricultural College, Germany.
- Berlin Agricultural College, Germany.
- East of Scotland Agricultural College, Edinburgh, Scotland.
- North of Scotland Agricultural College, Aberdeen, Scotland.
- Agricultural High School, Munich, Bavaria.
- Agricultural High School, Stonewall, Man.
- North Adams High School, North Adams, Mass.
- Teulon School, Man.
- Gardena High School, Los Angeles, Cal.
- Smith's Agricultural School, Northampton, Mass.
- Hopkins' Academy, Hadley, Mass.

Manual Training and Industrial Schools:
- Manual and Technical High Schools, Winnipeg, Man.
- Commercial High School, Boston, Mass.
- High School of Practical Arts, Boston, Mass.
- Wentworth Institute, Boston, Mass.
- High Schools for Boys, Boston, Mass.
- Newton Technical High School, Newton, Mass.
- Newton Independent Industrial School, Newton, Mass.
- Fitchburg High School, Fitchburg, Mass.
- Trade School for Boys, New York.
- Washington Irving High School for Girls, New York.
- Manhattan School of Trades, New York.
- Stuyvesant High School, New York.
- Industrial Schools, Gary, Ill.
- Stout Institute, Menomonie, Wis.
- Polytechnic Institute, Los Angeles, Cal.
- Mechanics Arts High School, Los Angeles, Cal
- Commercial High School, Los Angeles, Cal.
- Commercial Evening School, San Francisco.
- Technical High School, Cleveland, Ohio.
- Factory School, Rochester, Ohio.
- Trade School, St. Louis, Wis.
- Williamson Trade School, Philadelphia, Penn.

Consolidated Schools:
- Guelph Consolidated School, Ont.
- Starbuck Consolidated School, Man.
- Warren Consolidated School, Man.
- Sperling Consolidated School, Man
- Teulon Consolidated School, Man.

Normal Schools and Training Colleges:

- Training Schools, in Boston, Mass.
- Normal School, North Adams, Mass.
- Normal School, Fitchburg, Mass.
- Normal School, Toronto, Ont.
- State Normal School, Ypsilanti, Mich.
- State Normal School, Ann Arbor, Mich.
- Menomonie Training School, Wis.
- State Normal School, San Francisco, Cal.
- State Normal School, Los Angeles, Cal.
- Provincial Normal School, Winnipeg, Man.
- State Normal School, Kalamazoo.
- Normal Training College, St. Cloud, France.

Programme of the State Convention held in the Interests of Industrial education in Boston, May, 1912, attended by the Commission.

"Recent Developments in National and State Legislation"—Mr. Charles A. Prosser, Secretary of the National Society for the Promotion of Industrial Education.

"The Problem of Part Time Schooling"—Mr. Michael W. Murray, Director of the Newton Independent Industrial School and Special Agent for the Massachusetts State Board of Education.

"The Work of the National Society and the Massachusetts State Branch"—Mr. Arthur L. Williston, Principal of Wentworth Institute and Secretary of the Massachusetts State Branch of the National Society for the Promotion of Industrial Education.

"Trade School Equipments in Massachusetts"—Mr. Chas. R. Allen, Agent of the Massachusetts State Board of Education.

"The Relation Between Shop Practice and Applied Science"—Mr. William H. Timbie, Instructor in Applied Science at Wentworth Institute.

"Suggestions to Industrial School Teachers"—Dr. David Snedden. Commissioner of Education, Massachusetts State Board of Education.

Round Table Conference.

- "Problems in Industrial School Administration."
- "Machine Shop Instruction."
- "Applied Science and Supplementary Instruction of the Trade School."

"Definitions of Some of the Terms as Understood in Women's and Girls Industrial Work"—Miss Helen R. Hildreth.

"The 'All-Shop' Problem as Discussed in Bulletin No. 3"—Dr. David Snedden.

Discussion led by Mr. Arthur L. Williston.

"The Pedagogy of the 'All-Shop' Problem"—Mr. Charles R. Allen.

"Difficulties of the 'All-Shop' Problem as seen in the Girls' School"—Miss Florence E. Leadbetter.

Discussion led by Mr. Chas. A. Prosser.

"The Organisation of a Section on Industrial Education for Women and Girls in the National Society"—Mr. Charles A. Prosser.

COPY OF A RESOLUTION introduced by the Associated Boards of Trade of Western Canada at their Ninth Annual Convention held in Moose Jaw on September 18 and 19, 1912.

"Industrial Education.

"Be it Resolved, that this Convention of Associated Boards of Trade realising the importance of a very decided advancement in the educational methods of this Western country, and to that end is desirous of petitioning the several governments of the Western Provinces in the direction of the promotion of Industrial and Technical Education for the following reasons:

"*First*—To provide men and women capable of meeting modern demands of manufacture and thus to enable Western Canada to take its place in providing for our home requirements, and also to meet the necessities of the outside world, thus to conserve the many byproducts of the Western country already largely going to waste.

"*Second*—To provide training under modern conditions for specialised manufactures, which will be equivalent to the training which used to be given by systems of apprenticeship.

"*Third*—To give boys and girls a broad familiarity with the industrial processes which will open to them a wide range of useful employments.

"*Fourth*—To adapt public education to the real needs of the youth of Western Canada, nine-tenths of whom take up, directly or indirectly, industrial careers.

"*Fifth*—To collect and study facts of industrial education, to provide for the discussion of methods, to publish information and to spread the resolutions of successful experience in the field.

"*Sixth*—To aid local authorities and organisations in their endeavours to introduce organisation effecting education for the provinces or communities and working through committees or in other ways to furnish plans and other suggestions for such work.

"*Seventh*—To aid in bringing about provincial legislation in those provinces that have not yet made adequate provision for industrial education."

COPY OF A PETITION forwarded to His Honour GEORGE WILLIAM BROWN, Lieutenant Governor of our Province of Saskatchewan, and the LEGISLATIVE ASSEMLY of the Province of Saskatchewan, by the Saskatchewan Association of Architects.

We, the undersigned ratepayers and electors of the Province of Saskatchewan and officers of the Saskatchewan Association of Architects, being desirous that a technical education be afforded the youth of this Province, hereby humbly petition:

That you give your immediate attention to the question of the establishment and maintenance of schools or institutions within the Province of Saskatchewan wherein a technical education may be had, in order that the young craftsmen and mechanics of this Province may be granted such opportunities for education along these lines as are afforded by like institutions in Great Britain and on the European continent.

We, as a body, respectfully submit that in our opinion the necessity for such institutions is very great at the present time and that this necessity is growing greater daily.

We further respectfully submit that such institutions would be a credit and a permanent benefit not only to this, our Province, but to the British Empire as a whole.

Dated this ——— day of December, A.D. 1913.

(Signed) W. G. VAN EGMOND,
President.

F. CHAPMAN CLEMESHA,
Secretary Treasurer.

RECOMMENDATIONS AND CONCLUSIONS of the Committee on Industrial Education of the American Federation of Labour, 1912, presented to the Senate of the United States.

Recommendations.

The committee, after due consideration of the importance of the several systems of schools now in operation throughout the country, recommend the following specific types of schools for the advancement of the prospective apprentice to the trades, as well as for those who have already entered the trades:

1. Supplemental technical education: Supplemental technical education for those already in the trades. The demand for such instruction is measured by the necessity for training in particular trades and industries, and the chief aim of such instruction should be to present those principles of arts and sciences which bear upon the trades either directly or indirectly. Such schools are commonly known as continuation schools, whether their sessions are held in the day, evening or on the part time plan.

2. Industrial education: The establishment of schools in connection with the public school systems, at which pupils between the ages of fourteen and sixteen may be taught the principles of trades; not necessarily in separate buildings but in schools adapted to this particular education by competent trade trained teachers.

3. Trade union schools: The Committee recommends the continuance of progressive development in supplemental trade education as inaugurated by trade unions, such as the supplemental trade courses established by the International Typographical Union; technical courses of the Photo-Engravers' Union; School for Carpenters and Bricklayers, Chicago, Ill.; the International Printing Pressman's Technical School, at Rogersville, Tenn.; and the School for Carriage, Wagon and Automobile Workers, of New York City. The committee further recommends that all trade unions which have not adopted a scheme of technical education give the matter the consideration it so richly deserves; and they further believe that the undertakings of the above unions call for the most enthusiastic admiration and are entitled to the most cordial and loyal support.

4. We finally recommend that if in the course of time schools under public administration with a broad and liberal course of instruction (with an advisory committee composed of employers as well as trade unionists) shall demonstrate practical efficiency in training workers for the highly skilled trades, we favour the recognition of that portion of time spent in the schools, which, after an examination by the union at interest of the practical and theoretical ability of the apprentice, can be considered comparable to actual training in particular trades as a substitute for a period of the apprentice's time spent entirely in the industry.

Conclusions.

The committee believes that there are pressing educational needs which can at least be partly solved by the introduction of industrial training. At present a very large proportion of the children leave school between the ages of fourteen and sixteen. They change from one occupation to another, having no particular qualification for any vocation, and gain little in efficiency. Industrial education between the ages of fourteen and sixteen ought to awaken a new school interest and help to retain them longer in school; moreover, if industrial training took the children between the ages of fourteen and sixteen, when they are of little value in a business way and at a time when such education as they have received is of advantage to them as far as it goes, but hardly fits them for actual working places, then it would give them the proper training to prepare them to enter some branch of trade or vocational work. At the time our present public school system came into operation it met the needs of the people; the industries were carried on in the home, and the children were taught the manual arts there; the boy was taught his trade by his father, and the girl and her mother carried on in the home much of the work now performed in the factory. Economic conditions have changed and the schools must change with them. The ranks of skilled labour are being depleted and the work of the trades is being done by unskilled men or semi-skilled machine specialists.

The trade unions have been waiting in vain for twenty-five years for the manual training schools to furnish recruits to the "depleted ranks" of skilled labour. It is time now to take steps to bring back the standard of efficiency. We want a system which will develop the labour power of our people so that every worker may become interested in his work and approach the limits of human efficiency.

Our public school system of today teaches too much and educates not enough, and fails entirely to prepare its pupils for productive labour. It must be changed, and quickly, and the change must be radical. We can not add a few experiments in trade training in our larger cities or introduce intense manual training in manual training school departments to supplement a Latin and Greek curriculum. Our boys and girls must leave school thoroughly prepared by industrial training to do well some kind of productive work. A healthy community is impossible without the union of the school house, the home, and workshop. Modern life has not yet accommodated itself to the great revolution of our industrial system. Nothing but a thorough industrial education and understanding of economical interest of society can lead to the necessary union between labour and capital and give peace and prosperity to the present disturbed and suffering industrial world.

We believe that the education of workers in trade or industry is a public necessity, and that it should not be a private but a public function, conducted by the public and the expense involved at public cost.

We are opposed to the plan in operation in some places of having public instruction privately controlled. In such schools the boy receives his trade instruction only on sufferance of the manufacturer, and often he is surrounded by an atmosphere hostile to organisation and expelled if suspected of union tendencies.

The State has provided schools to teach trades to the mentally, morally and physically deficient; our corrective institutions, orphan asylums and blind schools are equipped to teach useful occupations. By what right can we refuse the same chance for the normal boy or girl? Would it not be more sage to engraft industry upon our public school system, and rather prevent pauperism, crime and premature orphanage than to make them the bridge to industry? We think so, and we do not beg it as a favour, but we demand it as a right. The 90 per cent. who are going into manual occupations have the same right to the best preparation for their life's work that the State can give them as has the 10 per cent. who go into the professions.

Organised labour is concerned also with who the teachers in these schools shall be. Men who have had only theoretical training do not and can not make effective teachers of trades. We do not wish to be misunderstood, we do not belittle or underestimate the value of theoretical training; we regard it as necessary, but theory must be combined with practical experience. The potential workman must be brought in contact with the man who has actually done things and who knows how and why he did them. Who can not only build a machine, but having built it can make it go, can give that training of attention that is acquired in having to do things with a real motive behind and a real outcome ahead. And not only must the teachers be men and women of practical experience, but so also must those who are to direct them. It is hardly to be expected that the executive head of a trade school can successfully direct the activities of that school and dictate its policy if that person has only text-book acquaintance with the great industrial world. They, too, must be people who have actually come in personal contact with the problems for which they are trying to find a solution.

We are opposed to any system which turns out not machinists but machine specialists. Specialisation in the industrial world is very different from professional specialisation. Instead of being at the top of his trade your machine specialist is at the bottom, if indeed he can be considered in the trade at all. He is a man who can do but one thing, and who knows little or nothing of the general principles of his trade. His whole efficiency is spelled "s-p-e-e-d."

We would protest, also, against those schools operated for profit, which advertise short cuts to the trades. They are turning out not even machine specialists, but are flooding the labour market with half-trained mechanics for the purpose of exploitation. There is a growing feeling which is gaining rapidly in strength, that the human element must be recognised, and can not be so disregarded as to make the future workmen either inefficients or mere automatic machines.

While we are willing to subscribe to any plan that offers efficient and practical instruction in productive operation, we do insist that emphasis must be placed upon education rather than upon product. The youth must not be exploited in the name of education. There must be the minimum of product and a maximum of education. In short, during the period of education it ought to be "construction for instruction rather than instruction for construction."

One of the great troubles in America today is that too many of our wage earners are misfits industrially. It frequently happens that in the matter of selecting a vocation or trade the individual is consulted too little. His trade is selected for him because it seems to provide lucrative employment or because it was the trade of his father and not because there is anything in the work which appeals to him. He is summarily shot into a trade regardless of his adaptability to it; result, he goes through life a misfit and mediocre workman, not because he lacked ability but because his energies were misdirected. We must have a system whereby the boys and girls of the country may have an opportunity to acquire educated hands and brains such as may enable them to earn a living in a self-selected trade or vocation and to acquire an intelligent understanding of the duties of good citizenship. The training for citizenship (the teaching of civics) is woefully neglected in practically all trade and vocational schools. The schools that are run for profit and the corporation schools say frankly, "Our business is to teach the trade, to turn out men who can do the work; beyond that we have no concern. Whether they can cast an intelligent vote or not does not interest us." Some of the philanthropic and public schools make a feeble attempt at teaching civics, but very few of them are getting anywhere. In most cases the human side is lost sight of. We want the boy (and girl) to be taught the fundamentals of civics, the meaning of government and the reason that law must be obeyed. He must be taught what the result of ungoverned emotion or uncontrolled action of any kind may be. He must be made to realise that the boy of today is the voter of tomorrow and that he has obligations to society which he must discharge, and in order to discharge them he must be taught broader views of citizenship and ideals of right and clean living.

He should be taught something, too, of his own economic value. He must understand the value of collective bargaining and of how to adjust his relations with his employer. If our boys were instructed in such matters before they enter the competitive field there would be fewer labour disputes. We want men as well as mechanics.

RESOLUTIONS adopted by the National Association of Manufacturers at its Seventeenth Annual Convention, New York City, May 21, 1912.

Whereas, one-half of the children in the common schools of the United States leave school by the end of the sixth grade, with no substantial educational acquirements beyond reading, writing and arithmetic in their simpler forms, the essentials of education and citizenship coming, if at all, after the sixth grade; and

Whereas, this half of the children soon forget much of what they learned in their brief school experience; and

Whereas, truancy and absence are so prevalent that less than three-fourths of the children are in school as much as three-fourths of the time, the enrolment being 17,000,000 and the average attendance being under 12,000,000, 1,600,000 being permanently absent from and unacquainted with school life; and

Whereas, illiteracy in the United States is fifty times that of several continental countries and is four times greater among the children of native whites than among the native born children of immigrants; and

Whereas, in many schools and many cities, educators are finding great cultural and educational value in the development of the motor activities, the practical and creative desires of the youth, in highly developed practical and extended courses in manual and prevocational training, and such courses are developing in an unexpected degree an appreciation of the dignity of labour of all kinds, and such moral qualities as diligence, concentration, perseverance and respect, and causing many to successfully continue in school who otherwise would leave discouraged early in the course; and

Whereas, a majority of the children who leave school prematurely, do so from no economic need, and in fact are idle about half the time between their fourteenth and sixteenth years, being the first two years out of school, and average for the first two years little over $2 per week in earnings, leaving school principally because their interest in practical and creative effort is not provided for; and

Whereas, the loss to the schools of 50 per cent. of the children in the middle of the elementary school courses is an incalculable waste of the human resources of the nation, these human resources being estimated by Professor Fisher as of the economic value of $250,000,000,000, and five times the value of all our other natural resources combined:

Therefore, for these and other reasons, the National Association of Manufacturers by resolution pledges its earnest support of the following principles of educational betterment as essential to society and to the spiritual, social and physical welfare of the youth:

1. Continuation schools for that half of the children who leave school at fourteen years of age, and mostly in the fifth and sixth grades, these continuation schools to be liberally cultural and at the same time to be extremely practical and related as directly as possible to the occupations in which the several students are engaged.

2. The development of a modern apprenticeship system wherein by contract the respective and equal rights of employer and employee are fully recognised, the entire trade is taught, together with such other subjects as are essential to good citizenship.

3. The development of secondary continuation or trade schools, by which the more efficient of the great army of boys and girls who will enter the continuation schools may progress from these lower continuation schools, as in some other countries, to the foremost places in industry and commerce.

4. Compulsory education through adolescence, being until the seventeenth or eighteenth year, attendance being in the all-day school until the fourteenth year, and thereafter in either the all-day schools or in the continuation schools for not less than one-half day per week, without loss of wages for hours in school.

5. The strengthening of all truancy laws and the development of public sentiment in support thereof.

6. The training of teachers in thoroughgoing methods of industrial practice, including as part of such training extended experience in actual shop work.

7. The establishment of independent state and local boards of industrial education, consisting of one-third each, professional educators, employers and employees, thereby insuring, as in the more successful European countries, the proper correlation of the schools and the industries.

8. The development of the vocational and creative desires of the concrete or hand-minded children now in the grades, discouraged, anxious to quit, and often called backward, only because the education now tendered them is abstract and misfit.

9. The establishment of shop schools and part time schools whenever practicable.

10. The establishment of departments or centres of vocational guidance so that the great majority of the children who now enter industry at fourteen with no direction, 85 per cent. falling into the "blind alley" occupations, may with the reversal of these figures, as in some other countries, enter under advice intelligently and properly into the progressive and improving occupations.

Resolved by the National Association of Manufacturers, that it is the imperative need of the industrial workers and employers of the country that thoroughgoing systems of industrial education be everywhere established so that our factories may be more constantly and better employed; that standards of skill and of output may continuously be improved, and that foreign and domestic markets may be better held and extended.

REPORT of the Technical Education Committee of the Canadian Manufacturers' Association.

I.—Decline of Apprentice System.

The widespread desire of manufacturers the world over for technical education during the past generation is due almost altogether to the decline—indeed, one might say the breakdown—of the old apprentice system. Without fully tracing the causes, with which your body is already familiar, of the failure of the time-honoured method of educating journeymen to meet the requirements of modern industrialism, it may be accepted as a fact. Even in these trades in which it still exists nominally, it is rendered useless by severe limitations placed on it. In the moulding trade, for example, the regulations in this city demand that there shall be only one apprentice for every eight journeymen. If the period of apprenticeship is fixed at four years, this means that a full generation must elapse before there is a new journeyman to take the place of an old one. Admitting for the sake of argument that death was the only source of removal of a working journeyman in that period, the ratio is still out of all proportion. Actuarial tables show that a journeyman moulder lasts much less than thirty-two years. But when we take into consideration the fact that many moulders desert their trade for other occupations, develop into foremen, or commence business for themselves, the result of the restrictions is apparent. Owing to the exceptional opportunities offered to all classes of Canadian citizens through the rapid development of Canada, particularly in the West during the past ten years, your committee believe that the number of journeymen who desert their trades is higher in Canada than in any other country. This condition will in all probability prevail for another generation. Every year when the Homeseekers' Excursions are announced, large numbers of employees in the factories of Eastern Canada desert their occupations to go west and become farmers or make their living in some other way. This makes the restrictions on the apprentice system even more onerous than they otherwise would be.

II.—Need of Completely Trained Managers.

Even were the apprentice system in good working order today it is doubtful whether it would fully meet the demands of the highly specialised industries of this century. The greatest difficulty manufacturers have to face is the securing of competent, well-trained mechanical experts to act as foremen, superintendents, managers, etc. Such men must not only be well up in actual trade practices, but must also know the theory of their work. The old apprentice system could meet the first requirements, but it would have to undergo important modifications to fulfil the second condition. It is probable that it could be developed so as to provide theoretical training if it were free from restrictions. This has been amply demonstrated by the splendid systems developed by several firms in the United States, notably the Brown & Sharpe Machine Company, of Providence; The General Electric Company, of Schenectady; The Baldwin Locomotive Works, Philadelphia; The Hoe Press Company, New York City, and several others. We would request that the commission devote special attention to those systems when visiting United States. They show in a very practical manner how theoretical training can be correlated with shop practice.

It is the dearth of competent executive men for the shops that impairs the industrial efficiency of Canadian factories more than anything else. Very few of these men can be recruited from the mechanics of this country because of the lack of technical education facilities. It is true these facilities are supplied on a limited scale by a few Canadian firms, but the movement has not developed far enough to improve conditions to any extent. The result is that many of the factory executives, as well as many of the highest paid artisans, are recruited from the industries of Great Britain and United States, where technical education has been established for many years. The system to be adopted in Canada should aim primarily at remedying this evil.

III.—Provide Technical Courses in Secondary Schools.

Your attention has already been directed to the fact that our educational systems are devoted almost entirely to preparing pupils for commercial or professional careers. Very little effort is made to interest the pupil who, when a certain stage in his education is reached, fails to respond to the effort of the teacher. This pupil is not to be condemned as an idler at once. Very probably his awakening mind is attracted by mental food other than that offered him in the rigid curriculum of our present system. He may desire to work with his hands and through a different system could easily be interested in his studies which would tend to guide those hands in their work. This pupil should not be turned out of the schools in a dissatisfied frame of mind. He should be retained until definite convictions have been reached as to what purpose he shall devote his life.

Under our present educational system many pupils are driven by the system itself or by their parents into commercial and professional life, who would be much better suited for executive positions in our workshops. Too often parents do not realise the prizes that are available in industrial life, and only in recent years have our educational authorities awakened to the fact that the educational system as at present devised tends to take the youth of the country away from industrial life.

The question presents itself—how can he be retained under the beneficent influence of discipline and study longer? We would suggest that some plan be adopted along the lines recommended recently by the Senior Principal of Toronto High Schools, to whose report we would respectfully suggest the commissioners' attention. Preliminary courses in technical education to fit in with the practical work of the manual training schools, perhaps, might be provided in the higher classes of the public schools, and in the lower forms of the high schools. These courses should be arranged as far as possible to reach the pupils who are dissatisfied with the ordinary "book learning" courses and whose wish it is to learn a trade.

IV.—Shop Practice.

In connection with these preliminary courses, advanced courses in technical training should be established in separate buildings. These schools would have the same standing as the present high schools and should contain shops where actual trade practices could be taught.

V.—Night Classes.

Night classes should be given in advanced schools for the benefit of those who cannot afford to remain in school in the day time beyond the time necessary to take the preliminary courses. These night classes should be continued over the entire year as far as possible.

VI.—Provide for Individuality of Pupils if Possible.

In drawing up the curriculum for the preliminary and advanced courses, provision should be made if possible to give greater scope for the individuality of the pupils. This would tend to produce the type of men required to fill executive positions in our industries probably more quickly than any other means that could be adopted. It is recognised, of course, that too much freedom in this direction might defeat the object in view. It is also recognised that the development of the system along these lines would prove expensive, but it is hoped that something may be done in this direction.

VII.—Question of Cost.

The question of cost naturally looms up in considering the problem of technical education. It must be recognised that the development of technical education is going to cost a considerable amount, but we feel it will be money well spent and hope that when the report of your honourable body is published, it will educate the citizens of Canada in this direction. In this connection it occurs to us that the larger cities and municipalities should not be expected to provide facilities for technical education for all the territory in their vicinity as seems to be the case at present, unless provision is made for outside financial aid. It is recognised, of course, that the biggest schools will be situated in the big cities and that many of the pupils will come from outside the cities. We feel strongly, however, that Federal and Provincial aid should be provided. This method has been followed with great success in the United States, Germany and other countries and should be adopted here. Otherwise the bigger municipalities will shrink from providing the funds for the erection and equipment of proper schools.

VIII.—Native Canadian Industries.

There are few things which cannot be made in Canada to advantage; therefore every industry should be considered. Those now established will naturally have the first claim upon your attention, but you will doubtless take into special consideration the development and establishment of those industries whose raw material is a natural product of Canada.

IX.—Alternating Classes—Shop and School.

In connection with the advanced schools provision should be made, wherever feasible, for the establishment of courses of study in which two divisions of the pupils alternate in shop and school work. In some industries local manufacturers can be found who will co-operate in arranging these courses, which have proven most beneficial and successful in certain United States cities. The pupils spend, say two weeks, in certain school and laboratory work, and then go to a factory for two weeks, where they see an exemplification of the processes they have studied. Their place in the classroom is taken by another division, who follow them again in the factory, and so on. The method lends itself admirably to the development of thoroughly trained mechanics, and is calculated to hold the interest of the pupils who have special aptitude along mechanical lines.

X.—Local Conditions to be Considered.

As far as possible the technical education facilities in any section of the country should be developed along special lines to meet local requirements. There should be a certain amount of latitude allowed the educational boards of the different municipalities so as to enable them to suit the courses they offer to the industrial requirements of their vicinity. The desire for uniformity should not be pushed to extremes.

Apart from the preparation of this statement there has been very little for your committee to do during the year. Obviously nothing was to be gained by attempting to further the projects mentioned in the reports of former years, because of a general desire to await the result of the present investigation and to shape future actions as far as possible in accordance with any recommendations the commission might have to offer. The report proper, therefore, ends at this point.

REPORTS OF THE INSPECTORS OF SCHOOLS ON SCHOOL GARDENING IN RURAL SCHOOLS.

W. H. Magee, North Battleford.

I am very pleased to be able to bring some of my teachers to the notice of the Department regarding their school gardens. They give colour to the statement sometimes heard that "the teacher makes the school."

1. Hopewell School No. 1324. Teacher, Miss Florence Hume.—This school was inspected early in June, and, of course, did not make the show that it undoubtedly did later. The children, with no assistance from the district and simply as a result of an appeal from the teacher and encouraged by her example, prepared very thoroughly plots measuring between three and four square rods in all. I never saw garden land any better prepared, though it was worked up from the raw prairie. I have no report regarding the actual plant growth, but if the work was continued as begun it would be very fine.

2. Neepawa School No. 1517. Teacher, Mr. T. Alf. Amoss.—This school was inspected later in June, and the ground had been to some extent prepared the previous year, as Mr. Amoss has remained in this school some years. Following some suggestions I had made at the institute held in Maymont in May or early June, Mr. Amoss' pupils had prepared test plots and various qualities of grain had been sown to observe results. Also, potatoes had been planted under varying conditions, as size of seed, manner of cutting, etc. The plants were up and the scholars were already observing growth. The pupils also had their individual plots and were growing flowers and vegetables according to their tastes. This school grew handsome flowers in 1912, during which year I made an autumn inspection.

3. Krivoshein School No. 24. Teacher, T. E. Armstrong.—This school was inspected on August 11. This garden deserves special commendation. The teacher began work in the spring. He enlisted the sympathy of the secretary of the trustees who ploughed a piece of ground containing about five square rods. This was worked up by the children, most of whom are of foreign origin, including Russians, Galicians and French. The work was well done, and at the time of my visit the garden was beautiful with flowers and rich with vegetables, including specimens of all sorts ordinarily grown in the province. The emulation among the children was even surprising, and the interest taken showed what can be done along this line. Careful records of the time of sowing, changes in the weather, germinating of the seeds, growth of plants, etc., was kept by the teacher and the educational effect was very pleasing. The first visit of every pupil on the morning of my inspection was to the garden, and I was much pleased with their earnest discussions and comparisons.

4. Prongua School No. 1117. Teacher, Miss Olive May Hirst.—The garden here was quite large and well cared for. Both flowers and vegetables were cultivated successfully, and I was the pleased recipient of a fine bouquet of flowers presented by one of the pupils from his special plot. This school was inspected on August 21. A slight frost had touched the

more tender plants, but in other respects it was an excellent garden, and as usual under a capable directrix, the children were very interested and were receiving much educational benefit.

5. Battle River School No. 585. Teacher, Miss Muriel Hirst.—This school was inspected August 21 and had an excellent garden, mainly vegetable. The teacher and pupils turned this school garden to commercial results. Considerable quantities of various vegetables were sold by a regularly appointed committee of pupils who banked the returns which amounted to some dollars. They drew cheques against the account for various small expenses and held the balance as prizes to be given at the close of the school term. The educational results were also quite marked here.

6. Edam School No. 2256. Teacher, Mr. Wilbert E. Lake. Mr. Lake has done good work in helping prepare the Saskatchewan Agricultural exhibit for the Tulsa Dry Farming Congress and is also doing good work along gardening lines in Edam. Through his influence the board has set aside four acres for school grounds, two of which are for experimental work in gardening and testing plots, etc. Mr. Lake had a fair garden this season, but more especially credit is due him for the well laid plans for the future.

There were several other schools in which fair attempts were made, but none to compare with these six.

J. T. M. Anderson, Yorkton.

There is a gradual and perceptible awakening of interest in this work. There is generally a more or less creditable showing of flowers planted outside of the school house. The only work done along the line of growing grain and vegetables as well as flowers has been done by the Saskatchewan trained teachers and by the Ruthenian students from the Regina Training School.

The best work I saw this year was at Everton School District No. 1413, a school composed entirely of German children. Here there were two large beds of lovely flowers, each of circular shape and nearly 12 feet in diameter. One of these was found on each side of the school door. Not far off was the vegetable garden. Here each child had a small plot and, when I called, the corn, potatoes, etc., were ready for use. The children were exceedingly proud of their first effort along these lines, and they proudly explained to me the process of planting, caring for them, etc., and concluded by telling me they intended to have a regular "school-grown" meal at the school house in the near future. Needless to add the work done in this school was generally of a high order.

Again at Langenburg School District No. 105 the pupils had individual plots which deserved commendation.

At Springside School District the school board has a plot fenced off and specially used for school gardens.

At Jarena School District in a Ruthenian settlement, I found they had gone in extensively for large plots of various kinds of grain. Over three bushels of potatoes were grown, and these will be sold to purchase some trophy for the school.

I expect much better results next year, as I am specially calling the attention of trustees to the advisability of preparing a piece of land for this phase of school work.

J. H. McKechnie, Wilkie.

Some attempt at school gardening was made in 10 per cent. of the rural schools this year of my inspectorate. Last year there was nothing.

W. E. Stevenson, Balcarres.

Regarding schools in my inspectorate that have done creditable work in school gardening or other forms of nature work the following schools are worthy of mention: Alkerton No. 142, Pheasant Forks No. 43, Keningsberg No. 1220, St. Joseph de Dauphinais No. 15 Roman Catholic, Lipton No. 1347, Indian Head No. 49, and Wolseley No. 25.

Of this list Alkerton school stands out prominently for doing the greatest amount of work and the best work. The teacher, Mr. F. H. C. Baugh, dug up the whole of the fire guard around the acre of land, and, together with the pupils, prepared and planted on it all sorts of grains, grasses, vegetables and flowers. Pupils were assigned lots and were made to keep records in their note books. Over 400 trees were planted and cared for by the pupils. Groves of trees and bushes were planted in the rear corners and single trees along the four sides. Beds of flowers and shrubs were artistically arranged in the front part of the grounds, and a good gravel walk, bordered by flowers and stones, was made from the school steps to the gate. The grounds were well fenced.

Pheasant Forks school, though taught by a lady, Miss K. A. Ruston, had a very creditable garden of vegetables and flowers.

Keningsberg school, taught by Mr. Stephen James, had a good collection of vegetables and flowers arranged in nice beds and cared for by the pupils.

St. Joseph de Dauphinais, taught by Mr. James Hunter Main, M.A., had the largest collection of grains and grasses. These were cut and bound in sheaves when I arrived. They consisted of wheat, oats, barley, rye, flax, buckwheat, millet, clover, etc.

The Lipton school grounds are neat and well fenced, and have several rows of trees along the sides.

The grounds of the Indian Head and Wolseley schools have been well laid out and planted with trees, shrubs and flowers. Though much of this work was done in former years yet considerable improvement has been made recently.

A number of schools are doing a little work, but owing to the apathy of the trustees in not fencing and ploughing the grounds, the teachers are considerably handicapped and are not doing as much as they would otherwise. I think if a special grant were given to encourage this sort of work most schools would be more enthusiastic and better results would be obtained. I think, too, that if a bulletin showing plans and giving suggestions were prepared it would prove helpful.

W. S. Cram, Yorkton.

Relative to school gardening I regret to say that I have found but little interest taken in the beautifying of school grounds, or in the development of flower and garden plots. I should desire, however, to give a special word of commendation for the creditable work done by the Wynyard School No. 2499, R. Denovan, secretary; Wm. Speers, principal, in flower and garden plots. Likewise special credit is due to the Arlington Beach

School District No. 1258, A. W. Pugh, secretary; Mr. Ferguson, teacher, for the general appearance of their school grounds. A photograph of this school and grounds with its two rows of trees would be a decided object lesson to other rural districts in the province.

W. T. Hawkings, Moose Jaw.

Peachy School District No. 992, Miss Dorothy Doggett, teacher, has made a very creditable collection of insects, plants, leaves and has them very suitably mounted; a large number of flowers were grown in pots. Skeletons of animals were also mounted.

Broadway School District No. 1708, Miss A. Cameron, teacher, has a very good garden made and vegetables, etc., planted. Flowers were also grown.

Kenilworth School District No. 1711, Miss M. McKee, teacher. Garden made, also collections of leaves.

The village schools, Mortlach No. 1368 and Brownlee No. 2019, have kept very good flower gardens and weather charts.

Thirty-one other rural schools have attempted flower gardening with more or less success, and in some of the schools very creditable weather charts were kept. In one school for many years the teachers have used these charts as means of fostering nature study by comparing the weather conditions for several years. One school, Edgehill No. 2791, arranged its gardens so as to be in keeping with the landscape.

The city schools have taken a very keen interest in this work and have charts, collections of rocks, birds' nests, insects and to some extent flowers, leaves, etc. Attention is also given to the observation of animals and plants that can be obtained at the time. Two schools attempted the gardening, having plots for the different classes.

A. W. Keith, Rosthern.

The work in school gardening and nature study has been very much neglected in this inspectorate. The only exception is the work of the Shellbrook town school in school gardening.

This school, under the principalship of D. L. Fitzpatrick, took up school gardening this spring. The plots were allotted to the pupils and considerable latitude was given to them in regard to what they put in.

The results were very encouraging. The pupils, even throughout the vacation, worked hard, and at the time of my visit had a good display of both flowers and vegetables.

From this I have developed a plan for a school garden fair for the Shell River district. The local agricultural society is willing to co-operate and the display is expected to form one of the attractions of their fair. I have also enlisted the active co-operation of the director of the Experimental Farm at Rosthern, Mr. Munroe, through whom various cuttings, seeds, etc., will be obtained.

If it is as successful as I anticipate, I will have a report for next year.

J. S. Huff, Davidson.

The work done in school gardening by the students of the Davidson School District No. 888, Mr. J. A. Anderson, principal, was most extensive and perhaps the most successful school garden in my inspectorate. This was the first year for the garden, and naturally the work was not as good as it will be another year. It was largely an experiment on the part of the school board, teachers and pupils, and I think they deserve credit for the results obtained. Next year the work will be more scientific and accurate and will be correlated with the subjects on the course of study.

Perhaps the most important result of this year's work was the interest it aroused on the part of pupils and parents in school work. It was common during the summer to see children taking their parents to the school to inspect the gardens. I am enclosing a report from Principal Anderson of what was actually done in this respect in the Davidson district.

"Work in our school gardens was begun during the summer of 1912. The prairie was broken, disced and harrowed. On Arbor Day, 1913, the ground was disced thoroughly, ploughed and disced again.

"The plots were laid out on the same day as the ground was worked up. The stakes, which were 2 inches by 2 inches and 1½ feet long were prepared and sharpened by the caretaker. These were then placed in pairs 4 feet apart, 16 feet from the trees, with an intervening space of 1 foot. Two stakes thus marked a garden. This work was done by the boys and the principal, care being taken to have all in straight line. We procured fifteen small hoes, 6 inch blade, and fifteen small rakes, each 1 foot wide. These were sufficient for our purpose, and it was arranged that these be always kept in the same place when not in use, and one was appointed from each of the three rooms having gardens to place and count them. We neither lost nor broke one during the season. For the first day children brought hoes and rakes from home, so that all the plots were raked over and smoothed down on the first day.

"One boy copied the names from the register in the order that they appeared there, and as the stakes were driven they were numbered on each side of the garden the same. The corresponding number was then placed opposite the name in the record book. Later a survey was made by some of the larger pupils, and note made opposite each name what there was growing in the garden.

"Seeds were procured by the children as the subject had been discussed long before garden time, but at last when the planting was going on we obtained shortage from local dealers. We had some difficulty in getting what we wanted, so, on another occasion I think we shall send to a seed house. Some children sent off to the States for seeds. One package was sufficient for quite a number, as each would require only a small quantity of one kind.

"A plan of the garden had been made two or three times before the seeds were planted and instruction given regarding the planting of seeds. Some pupils raised the garden plot. Of course this was not according to instructions, but due to a mistake, and strange to say, the raised garden took the prize over the flat ones.

"Each pupil planted a definite number of agricultural seeds for purposes of experiment. They made a very pretty background for the plots. The grains were threshed by the pupils this fall and the number obtained from those planted was counted.

"There were only a few good reports as the winds play havoc with small quantities sown, but the pupils got some idea as to the amount one could get from a grain of flax and from a grain of wheat.

"Most of the work was done during school hours, but a number of pupils worked on Saturday and carried water, though they were not asked to do so. There was one instance of a parent who came up after school hours to help make the garden.

"During the summer holidays people of the village took great pleasure in walking around to see the gardens and indeed they formed a real charming background for the school grounds. There were some things taken from the gardens by strangers and this led some who planted them to carry off whatever was worth while before they were inspected.

"We made arrangements with the Agricultural Society to judge the gardens in connection with the Fair, and prizes $3, $2 and $1 were given.

"Our citizens offered in all $40 to be devoted as prizes for the best gardens, and this we are using to make each pupil a prize of a leather bound book.

"Essays were written on the subject of 'School Gardens' by the pupils and the best one was published in the local paper. The interest and pleasure which pupil and parent showed in the gardens seemed ample reward in itself for making them.

The outlay:

Ploughing, etc.	$ 7.00
Fifteen hoes and fifteen rakes	16.00
Stakes	2.50
Seeds	2.30
Total	$27.80

"The trustees supported all our work very heartily.

"I think there should be an exhibit made in the village of the products of school gardens and of school work. The drawings and colour work should have special reference to something in the garden. Prizes might be offered for the best pupils' collection.

"A piece of ground should be summerfallowed each year for use the next year." *John A. Anderson.*

J. E. Coombes, Saskatoon:

I am inclosing a report on the work done in school gardening by the teacher and pupils of Bergheim School District No. 2819. The success which has attended the efforts of the school in this work is due chiefly to the interest inspired in his pupils by the teacher's own enthusiasm.

This is the only rural school in my inspectorate that has attempted anything beyond the ordinary in school gardening.

In the city, the work has been confined exclusively to "home gardening." The pupils in each school prepare plots at home, seed them and attend to them throughout the year. The school board appoints a committee to examine the plots and award the prizes. I may say that there is considerable competition and rivalry among the different schools to see which will secure the greatest number of prizes.

Bergheim Report (John D. Williams, Teacher).

The Bergheim School was opened at the beginning of March, 1912, with an enrolment of thirty-six pupils who were mostly of Russian-German nationality.

The need for a school garden was recognised at the outset, as twenty-three of these pupils had never been to school before and did not understand any English. It was, therefore, thought necessary to have a garden, through the influence of which the pupils' interest in their work would be increased, and which would bring them into closer touch with nature, providing, at the same time, a good means for them to express themselves in English by having a matter of common interest to occupy their attention.

A certain amount of difficulty has been experienced in the laying out of the grounds owing to the rolling character of the ground upon which the school is placed.

The grounds comprise two acres and the soil is a fairly rich loam, having a considerable amount of gravel mixed in with it.

Work in 1912.

The garden was started on Arbor Day, 1912; the children first cleaning up the school grounds and then marking out and digging their plots. The higher grade pupils were allowed the option of choosing a plot for themselves or of joining in with another pupil and working the plot together.

The plots, which measured 7 feet by 8 feet, with a path 1 foot wide between each, were divided into two sections with a pathway of about 5 feet in width between them. But this arrangement was not found to be entirely practicable as the gardens were too wide for convenient work and the pathway of 1 foot was too narrow. Next year they will be remodelled to plots of 6 feet by 8 feet, with a pathway 2 feet wide between them.

The children's flower garden is on the south side of the school and has a slope towards the south which has proved to be somewhat of a drawback during the dry seasons, but has called for greater care in the conservation of moisture for successful flower growing.

The children put borders of stones around their gardens and made geometric designs with stones inside them. The lower pupils were given the seeds of flowers which are easy to grow in order to prevent any disappointment from failure; but the higher pupils were required to grow flowers which need care and attention and had to study as far as possible the demands of the respective plants for food and water.

A strip of land (one-quarter of an acre in extent) on the west side of the grounds was worked up by the senior trustee and seeded down to flax. The children watched the development of the plant and noted the conditions of the soil. When this crop was ripe it was cut by the teacher, gleaned by the pupils and flailed out by them later on in the fall.

When the children had seeded their gardens in the spring great interest was taken in the working up and planting of a patch of nearly one-eighth of an acre of alfalfa.

The inoculation of the seed provided an interesting lesson on the lives of leguminous plants, which was followed up by examinations of the root system when the plant was growing.

The boys took great care in working up the plot, and it was seeded about the middle of June. The seed was broadcasted and sown at the rate of about 16 pounds to the acre, a nurse crop of oats being seeded with it. This seeding was found to be too thick, but nevertheless there was a good growth for the first season.

It was cut early in the fall, and the oat straw was left high in order to hold the snow.

In the spring of 1913 it started up well, but was dwarfed by the action of the heat during the dry spell.

The intention, at present, is to cultivate the crop until it shows a depreciation and then to use the ground, thus nourished by the food collected by the alfalfa for a flower garden.

During the summer holidays of 1912 the school was fenced and a grade in the shape of horseshoe was built while the road past the school was being graded. This driveway, made of gravel and sand, filled up a hollow between the school and the gate.

At the beginning of the fall term the pupils resumed the work in their gardens, and it was decided to make a round garden encircled by a lawn inside the driveway.

In order to do this, the side of a hill had to be taken down about one foot, and the ground inside the grade had to be levelled off. The boys voluntarily undertook this work, and entered into it energetically using a wheelbarrow and spades.

A round garden was made up in the middle of this space, and the rest was worked up for a lawn. As the soil was not considered to be rich enough for flowers, some leaf mould and manure was added.

It may here be added that the litter from the school barn, and also the grass roots, etc., are saved by the children and put into a compost heap for future use.

The next important phase of the work taken up was the selection of the plants of wheat from the standing crops of the district, in connection with the Western Progress Wheat Selection Competition.

The rules of the competition involved the selection of twenty-five wheat plants of the same variety and taken from the same field, which were to be carefully enveloped, labelled and sent to the agricultural university.

The entries were judged at the seed fair in the spring of 1913, the school winning the first four prizes for wheat in this competition and the first prize for a sheaf and gallon of oats, offered by the Canadian Seed Growers' Association. The total amount won in these competitions was $76.

In the wheat competition the ten best heads of each entry were sent back to the respective competitors, who were required to sow the seed from them during 1913. Each head was packed in a small envelope and numbered so that head No. 1 would have to be sown in row No. 1, etc., and a full report of each row was to be kept by the competitors.

The instruction and opportunity for investigation which was afforded the pupils by this competition will be invaluable to them when they start to manage farms of their own, as it brought them into daily contact with the life of the wheat, and they were able to compare the progeny of each head.

One feature was remarkably in evidence; that was that the seed sown from the short heads only produced weak plants which bore small heads, while that sown from the long heads produced healthy plants, the heads being longer than the original ones from which the seed was taken.

The outside work in the garden was supplemented in the class room as the garden afforded subjects for nature study lessons and problems in arithmetic and mensuration, the making of plans of the school grounds, and lastly, interesting topics for language lessons.

The pupils had to keep a daily record of the weather and temperatures, using the same to show the effect of the weather upon their gardens.

Work in 1913.

During the winter the snow had banked up well on the alfalfa, which showed a promise of a good start in the spring.

When the first sign of spring appeared preparations were made for starting the spring work. The gardens were planned, the children drawing the designs for their plots in school. Cabbages, asters, kochias and sweet peas were started in boxes indoors.

As soon as it was warm enough to work outside the attention of the pupils was first turned to the wheat plots.

These were carefully prepared, attention being paid to the location and nature of soil in their plots. The plots were about 12 feet square and there were ten of them. A pathway of 3 feet was left between them.

As the school board had had this part of the grounds summerfallowed the previous year the soil was in good condition.

The children then remodelled their flower gardens, and a considerable improvement was made over the previous year.

For Arbor Day the teacher managed to borrow a team of oxen, a plough and a set of harrows, and a piece of ground on the west side was worked up and was later seeded to vegetables.

The vegetables were seeded with a hand drill, which was afterwards turned into a cultivator.

The children's gardens and the large round garden in front of the school were then sown, a new border garden being added which ran the whole length of the flower gardens. This border garden was seeded to sweet peas and nasturtiums sown alternately.

The paths between the gardens were improved and gravel was put down; a row of corn was also sown along the south end in order to form a windbreak.

The lawn inside the driveway was also prepared and sown to a mixture of Kentucky blue grass, red top and white clover.

The school board then had a strip of 8 yards in width prepared for the planting of trees. This strip extends around the school grounds, inside the fence. Five rows of trees were planted, being made up of two rows of maples, two rows of ashes and a row of willows and poplars planted alternately, the total number of trees planted being about 1,375. After these trees had been planted by the school board a row of poppies was planted with the drill as a border, and a little way in front of the poppies a row of carrots was sown for a green border, the carrots being taken up and sold with the other vegetables in the fall. These poppies were cultivated during the summer with the little cultivator which was drawn by two of the boys.

As the spring was a very dry one there was considerable difficulty in getting some of the seeds to start. Seeing, therefore, that the drought was becoming worse some of the gardens were covered with sacks, others with straw, in order to protect them from the rays of the sun. The effect of this experiment was appreciated by the children when they saw their sprouts appearing above the ground.

The cabbages, kochias, etc., were then transplanted and soon after this the cabbages were attacked by cutworms. The pupils were able to watch the work of the cutworms, but finally stopped the evil by putting paper collars around the young plants.

During the summer a close watch was kept upon the wheat plots and in connection with the work a daily weather record was kept by the pupils. During the holidays the pupils returned at intervals to weed and care for their plants.

At the beginning of the fall term a very instructive address on gardening was given to the pupils by Mr. S. E. Greenway, Director of Extension, University of Saskatchewan, who afterwards inspected the gardens and wheat plots, there being also other visitors present.

The children took a great delight in sending bunches of their flowers to the sick children in the City Hospital at Saskatoon.

At the end of August a club was formed to get rid of the noxious weeds and gophers in the neighbouring district, and it is significant of the effect of this that the pupils had pulled and destroyed over 1,000 bad noxious weeds before October, besides discovering some water hemlocks which had been the cause of the death of a cow belonging to a farmer of the district, although he had no knowledge of the cause of her death.

During the fall the vegetables were harvested and sold and the rows of wheat were harvested as they got ripe. They are now ready for entry in the second part of the competition.

The result of the work of these two years can be seen in the improvement of the school grounds, the spirit of co-operation and unselfishness created in the pupils as a result of having had to work together and help one another, and also in the pride displayed by them in trying to better their surroundings. It has encouraged a better spirit of neatness and tidiness and care and the moral effect is very encouraging.

One of the main effects has been the influence the garden has had in facilitating school work. There has been no lack of material to keep the interest of the pupils centred upon their work.

It has provided a number of interesting arithmetic, language and nature study lessons, which otherwise would not have appealed to them so strongly, and lastly the children, through their practical work, are unconsciously getting a hold of those truths in nature which if only taught in the classroom unaccompanied by a practical demonstration often have not a lasting effect upon their minds.

Most of the school teachers in this district are anxious to have a garden, but the main difficulty lies in the fact that it is often a hard problem to get anyone to go down to the school and break a piece of land in order to furnish a start.

If parents would recognise what the garden means to the school and their children they would not hesitate to do their part to help the work along.

Failing a better way a school could be built on land that has been previously ploughed and worked up so as to give an opportunity to seed the majority of the school grounds down to lawn grass.

In order to increase the pupils' interest in agricultural work a number of competitions similar to those mentioned above might be recommended.

As some difficulty might be experienced in sending all entries to a central point the competitions might be subdivided and the best exhibit from each inspectorate sent in.

If the University should still continue to support the idea they could probably furnish heads of grain of different pure varieties.

Also as the School Garden Association of America is going to send a school garden exhibit to the Panama-Pacific International Exposition in 1915, it would be good to see a large representative exhibit from the school gardens of Saskatchewan.

Books dealing with school garden work might also be encouraged in school libraries, there being several books (*e.g.*, "Little Gardens for Boys and Girls," by Margaret Higgins) which would be very helpful.

An outline of the plan of work recommended could be sent to each school including a list of the flowers, etc., best adapted for the grades.

Also if every encouragement is given to the school boards to make the school garden a practicable feature the standard of moral and intellectual efficiency in the rural school will be improved.

John D. Williams, Teacher.

R. W. Asselstine, Rosetown.

The schools in the Rosetown inspectorate, to a large extent, have been recently organised and very little has been done in the matter of school gardening. Most of the teachers, however, especially those in yearly schools, see the advantage of this work, and I am hoping for much greater results in 1914.

There are, however, three schools which deserve special mention for the work already done. These are the Violet Hill School District No. 2347, Warminster School District No. 1564 and Haddington School District No. 68. The grounds of the first two schools have been surrounded by a grove of trees, some 15 feet wide, consisting of maple, poplar and willow. Already these trees have attained a height of 6 to 15 feet and afford, in addition to the improvement of the school grounds, an excellent example to the pupils of the advantages to be derived from planting trees about their own homes.

Between these trees and the school house a plot of ground has been broken up and cultivated for school gardens. This plot has been subdivided into smaller plots so that each pupil has a piece of ground to till and plant with flowers and vegetables. It was early spring when I visited these two schools so I had not an opportunity to see the pupils at work.

In the Haddington school not so much has been accomplished in the planting of trees, though a beginning has been made in that work too. But the school garden was very creditable indeed. The teacher and each pupil had a plot of ground in which flowers and vegetables were grown. The pupils were very much interested in the work and their labours were rewarded by a rich supply of both vegetables and flowers. A larger piece of ground was devoted to the growth of grains; this was attended to by all the pupils and teacher. In addition to this considerable study has been made of the local weeds and the means for their eradication. The seeds have been gathered in bottles for future examination and study. The work of the school garden was correlated with composition and drawing.

W. S. Cram, Yorkton.

I inclose herewith synopsis of work done in Wynyard and Lanigan schools as furnished to me by the principals of these two schools. Wm. H. Speers, Wynyard, and H. C. Grose, Lanigan.

I have marked some points which I considered of more especial interest. The work done in these schools was merely suggestive of what may be done. So far as I can learn, pupils were decidedly interested—interest begets interest. The teacher is the mainspring of action. It was to be regretted that the work of the Wynyard pupils was cut short by a hail storm in the early summer, but I can personally attest to the creditable work in their school and to the well-kept plots under Mr. Speers' supervision.

Outline of Work Carried on in the Lanigan Public School Garden, 1913.

1. We used an old fireguard along the front of the school for our garden.

2. All soil, a strip about 6 feet wide, was dug by spade.

3. It was then well tilled by use of hoes to pulverise clods and free earth from roots of grasses.

4. All roots and grasses were thoroughly raked out and burnt.

5. When soil was thoroughly pulverised a trench (8 feet deep) was dug along both sides for drainage.

6. The strip was then divided into square plots and each plot given to a pupil who could take care of them .

7. Each plot was then levelled and carefully packed by the owner and prepared for seed.

8. Seed was bought by the pupils themselves (the board refusing) and a selection of hardy vegetable and flower seeds chosen as follows:

Vegetables: Radish, corn, beets, bean, pea, lettuce, onions, parsley and cress.

Flowers: Sunflower, candytuft, nasturtiums, pansies, poppy, daisy, marigold, sweet pea, etc. These were equally divided among pupils and instructions given to plant.

9. Trees were set in this cultivated strip about 12 feet apart.

10. Each plot was planted half to vegetable and half to flower seed.

11. Every Friday afternoon a period of garden study was taken and weeding done. Plants recognised, also growth watched.

12. Gardens were watered by pupils as often as necessary. Sometimes every night.

13. When vegetables were large enough they were thinned into proper spaces.

14. Trellises were placed for climbing plants.

15. At maturity seeds and seed pods were collected and collections made. Also refuse cleared off.

16. On the whole we were well pleased with our results. Many lessons were learned which will be applied in 1914.

Plans for 1914.

We obtained about 200 old cans, and by heating removed both top and bottom, and these we filled along with several boxes with good earth. In the early part of 1914, say March, we shall obtain cabbage, cauliflower and tomato seeds and plant these in the boxes. When plants are about 3 inches high they will be transplanted into the cans, and as soon as all danger of frost is gone the plants, which will be well advanced, will be set in the garden by merely pushing earth out of can which will not disturb the roots.

In regard to our outside work, we will profit by experience of 1913, viz.: vegetables and flowers will be in separate parts. The school working as a whole in a united garden rather than in plots. More area given to the growth of each plant.

We will attempt to make some profit out of our garden.

Flowers will be planted solely along the front of the yard and a portion of the front part prepared as a lawn. Some arrangements will be made to secure beauty of arrangement and "landscape" effect studied.

Our hopes are very high, and we expect to make a splendid showing next year. *H. S. Grose.*

School Garden Report of the Wynyard S.D.

The first attempt at school gardening in Wynyard School District No. 2499 was in spring of 1911. The school grounds were rough prairie sod with considerable willow and poplar bluff in one corner at that time.

We commenced our work about April 1. The school board gave us some lumber and a few nails; then, with the help of a few borrowed tools, the boys constructed flower boxes for every window in the school (28). The boys were anxious and willing to bring tools and worked with a will. As the windows were not all the same width nor were the sills uniform in width, the boys found ample scope for variety and originality. These workers did the measuring, planning and constructing themselves. They made the larger boxes first, so that if any of these were wrongly measured, etc., they could be used for the smaller windows. Every boy was eager to do something, and the teacher has a big task to perform in organising, so that each boy may get something to do. These boys thought that they were performing wonders just because they had a share in the work.

When the boxes were completed the girls suggested that they should be papered. Painting would have been better, but papering was their suggestion. This time the girls did the measuring, etc., so as to know exactly how much paper was required. They made the paste. The actual work of papering was soon completed.

The boxes were now distributed to each of the rooms. Each room must look after planting and caring for plants in that room. Meetings were held to talk about the kinds of seeds to get. As the ground was still frozen, the teacher taught a few lessons about planting seeds, kinds of seeds, soil, etc., or rather the teacher guided the thought of the pupils so that the pupils felt that they were doing everything themselves.

When the ground thawed the boys filled the boxes with the best soil they could get. While filling boxes they were talking about the kind of soil, etc., thus reviewing class work. By this time the pupils had supplied seeds enough to fill fifty boxes. These were put away carefully for garden plots.

It would take too long to enumerate the number of lessons suggested by this work which were taken up, and which might profitably be taken up. The students took a pride in this work because it was their work. Slips of some plants were brought and their growth observed.

I was more convinced than ever that we as teachers need not wait until we have fully equipped rooms for manual training to do this good work. Let the teacher take the initiative and do something, and these other good things must surely follow.

With the above preparation, it was easy to get pupils interested in the outside garden with individual plots. The school board was contemplating fencing school grounds. I advised that at least a strip of land six feet wide be ploughed and well cultivated before fence was built. While this strip was being ploughed I hinted gently that a certain piece of sincooth sod in front of building be ploughed and cultivated at the same time. I must add here that as soon as we learned that the board would plough the land the boys immediately set to work and scrubbed out the brush as well as possible. I have found out by experience that it is possible, though not advisable, to prepare a school garden on sod the first year. In that case the ground must be thoroughly rid of roots and *well disced.* The discing cuts up the top layer of grass into fine particles. After this discing the ground is ploughed, and with further discing, harrowing, hoeing, raking, spading, etc., a good or at least a fair seed bed may be gotten.

During the week before Arbor Day the pupils surveyed the land. In that time the pupils learned more about surveying, measuring, area, roads, than a teacher could drill into them by talk in a month. The plots were 10 feet long and 5 feet wide with paths 2 feet wide around every plot.

On Arbor Day trustees, some willing ratepayers and *every* pupil was at school long before 9 o'clock. Wheel barrows, spades, rakes, hoes were certainly in evidence. The trustees and ratepayers planted the trees which were supplied by the board. We commenced our experiments with thirty-six plots. The students were divided into thirty-six sections, with a leader for each section. The reason for a leader will be evident when the teacher has to supervise all. It also had its training value.

The pupils were allowed the widest range for originality; arrangement of plot, choice of seeds or plants, care of plot, watering, weeding, transplanting, etc.

After the plots were all seeded, the boys built a fence around the garden. Fence posts, 2 inches by 2 inches, wire, poultry netting, 3 feet high used. A neat gate was adjusted. The whole fence was painted by pupils.

We arranged a schedule for each leader for each section. Kinds of seed planted, good seed, bad seed, examination during germination, time of sprouting, growth, etc. This was kept fairly well for about seven weeks when a severe hail storm almost destroyed the whole garden.

The pupils were broken hearted over the destruction of garden. However, the results certainly will spur us on to greater things next season. We have already some preparation for next spring. All boxes are filled with fresh earth and stored away until March.

We have also stored away a number of buds for early spring. Last week we received a large assortment of bulbs from Ireland. We have also arranged to build a green house 12 feet by 18 feet with storm sash of school early in spring. This will enable us to grow more of the tender plants and transplant them when well advanced.

The result of this work was a revelation to me. Pupils that were dunces, I actually called them blockheads, as I thought, became the keenest, brightest and most enthusiastic workers that I had. The work had touched a spring in their lives—they came out of their shells. School work, and who knows, possibly life, has a meaning to them now. A new revelation, hitherto unknown, sprang up between teacher and pupil. Wasn't the work worth the while?

Again we had two families in town who persisted in sending children to a nearby country school because of some fancy notion about the teacher. When these children got interested in our work, no more country school for them ! This is not a slur on the country schools at all. Both parents said to me, "It is no use, Speers, you have got our children and we have to come round." Our feeble attempt at such a crude school garden surprised us. It was the beauty spot of the town and parents and visitors came to admire and examine. Then again the pupils wanted a garden at home. Nearly every home had a garden. In some cases it was only four or five sweet pea vines, but it was a start, and that is something.

The most important effect is that upon all the other branches of school work. It would be impossible to give a full outline of this exceedingly important side of the work, in fact, we cannot state it in words.

"When do you get the pupils to do this work?" is a question often asked. My answer: "Are you a live, intelligent teacher?"

The resourceful teacher relates all work. I count it no crime to do the work in school hours, if necessary: it is school work. This western country is demanding an intelligent class of farmers, we as teachers must do our share, it is our duty. But there are so many difficulties. Someone will say, or rather the majority say, the live teacher looks at the positive side, he takes the spade in his own hands and shows what can be done. He will soon eliminate the negative side. No doubt there are many difficulties but there are difficulties in all work or there would be no pleasure in life. The teacher must take the initiative and do something.

Wm. H. Speers.

The reports of the inspectors of schools are of special value for two reasons: first, in affording gratifying evidence of the interest taken in these subjects by the officials of the department of education; and, secondly, in directing the attention of the people of the province, and of teachers especially, to what can be accomplished in the average rural schools when the proper spirit is manifested.

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PART TWO

THE SUPPLY AND TRAINING OF TEACHERS
COURSES OF STUDY AND TEXT BOOKS
CONSOLIDATION OF SCHOOLS
PHYSICAL AND MORAL EDUCATION
TEACHERS' PENSION FUND

REGINA, SASK., *September 1, 1914.*

TO THE HONOURABLE WALTER SCOTT,
Premier of Saskatchewan.

SIR,—Your commissioners appointed under Order in Council the ninth day of May, 1912, beg to submit their report on the following topics of inquiry, namely, The Training and Supply of Teachers, Courses of Study, Consolidation of Schools, Physical Education and Moral Education, being a continuation of the report as submitted on December 18, 1913.

We have the honour to be, Sir,

Your obedient servants,

D. P. MCCOLL, *Chairman.*
T. E. PERRETT.
DANIEL MCINTYRE.
W. A. MCINTYRE.
W. J. RUTHERFORD.

THE SUPPLY AND TRAINING OF TEACHERS.

The successful administration of a school system depends mainly upon the efficiency of the teaching body. Both directly and indirectly, this truth was expressed in the evidence submitted to the commission. Many complimentary statements were made concerning the teaching force in Saskatchewan by the inspectors and the general public. Frequently, however, complaints were made of inefficiency due to immaturity, inexperience, short tenure of office and lack of interest on the part of some who are using the office as a stepping-stone to some other calling.

Schools are being established in Saskatchewan with great rapidity, and in spite of the fact that many teachers graduate each year from the normal schools the supply is much below the demand and the Department is practically forced to grant annually provisional certificates or "permits" to persons who are not properly qualified to take charge of schools.

SUPPLY OF TEACHERS.

There were issued in 1913, 2799 licenses or certificates to teach. These were classified as follows:

Provisional	1,209
Third class	731
Interim second	391
Permanent second	177
Interim first	168
Permanent first	37
Interim high school	73
Permanent high school	8
Collegiate	3
Interim kindergarten	2
	2,799

Many of those granted provisional certificates had the necessary scholarship but were without professional training. The great majority had no previous experience in teaching.

The following table is an indication of the inability of the province to provide its own teachers, showing the number of "permits" granted since 1905:

1906	187
1907	252
1908	364
1909	508
1910	599
1911	920
1912	1,336
1913	1,251

In the past, Saskatchewan has drawn liberally from the older provinces, and especially from Manitoba, Ontario and the Maritime Provinces. This source of supply cannot continue much longer. The demand for fully qualified teachers is becoming as insistent in these provinces as in our own. Nor can we look to the Motherland for a permanent supply. The number offering from that source is limited. For the great body of its teachers Saskatchewan must look to its own young people, the graduates of her high schools and the University.

It may be expected that as the Province becomes more settled and the occupations of the people more fixed, a larger percentage of young men and women will show a willingness to enter the calling. This is being illustrated during the present year. But if teaching is to command the services of the most capable young people in the Province it is necessary that it be made so attractive that those who enter will remain in it for a number of years. Increased experience in teaching results in increased usefulness.

It is a matter of common observance that many of the most distinguished members of other professions began their careers as teachers in the public schools. Had there been monetary incentive and some guarantee of tenure of office to continue teaching, no doubt many of them would have been content to accept it as a life occupation. Education is a matter of such moment in a democracy that the very best teaching talent should be employed.

To encourage teachers to take high grade certificates the plan of grading legislative grants has in some places been adopted. To retain them in office for a number of years and to prevent their migration from post to post, a sliding scale of salaries has been prepared by many boards of trustees. Both of these suggestions are worthy of careful consideration.

In view of special conditions existing in Saskatchewan and of the desirability of inducing as many men as possible to remain in the teaching profession, it would seem especially desirable that boards of trustees should consider the possibility of building dwelling houses for their teachers. This plan has been carried out with marked success in other lands, and if steps were taken to this end there seems no reason why its adoption should not work out successfully. It would undoubtedly go far towards solving a difficult problem in so far as non-English districts are concerned.

The necessity of a retirement fund for teachers who have grown old in the service or who are incapacitated for some other reason is now becoming generally recognised. In the appendix will be found types of pension schemes that may be regarded as fairly typical.

THE TRAINING OF TEACHERS FOR ELEMENTARY SCHOOLS.

Academic Training.

Eighty per cent. of the teachers of Saskatchewan are in one-roomed rural schools. The majority of them are visited by the inspector of schools once a year. Because of the short tenure of office some escape inspection altogether. For this reason they require both independence and power of initiative in order to organise and direct their work successfully. Though these qualities are partly the result of home training and early association, they may still be developed in school through wise choice in methods of government and instruction. This fact should be carefully noted by those chiefly concerned with the training of teachers, the instructors in the high schools and normal schools.

In the evidence offered before your commission considerable dissatisfaction was expressed with the attainments of many of the teachers in the elementary branches of instruction. This criticism was not directed exclusively against those prepared in Saskatchewan, but was held to be true generally. Teachers should have a thorough knowledge of the subjects they are called upon to teach. Especially should they excel in reading, composition—including writing and spelling—simple arithmetic, geography and history. In addition they should be capable of supervising the health of the children, of conducting physical exercises and games and of directing manual work in its simple forms. More important still, they should in speech and manners be capable of serving as models for their pupils; and in sympathy and interest should be in touch with the communities they serve. The high schools and colleges in arranging courses for those wishing to become teachers might well emphasise branches now considered of secondary importance and may well relegate to a secondary position some subjects that now receive the bulk of time and attention. Nor will good results be reached in the secondary schools until all the teachers on the staff assume responsibility in this matter. The teachers of science and mathematics must feel that training in speech and manners falls to them quite as much as to the teacher of English composition. The teachers' course in the high schools must be considered a *vocational* course, and as such should prepare for a definite work in life, as well as provide general culture.

It is a matter of common observation that in their methods of teaching and discipline young teachers are much more likely to follow the example of their best teachers, and particularly their teachers in the high school, than the instruction they receive in the normal school. Every high school teacher must be looked upon not simply as an instructor in assigned branches but as one whose duty it is through example and inspiration to give prospective teachers direct training for their work.

Professional Training.

On the purely professional side, the elementary course of training for teachers should be as simple and direct as possible. Most of the time should be given to a consideration of the aims and methods of teaching and government. Practical demonstration followed by discussion and accompanied by the handling of classes by students should receive much attention. Time should also be given to a careful study of the school curriculum and the regulations of the Department of Education.

In the course of training for second class certificates, which should be taken only by those who have had the elementary course, more time may be given to a consideration of the sciences upon which education depends, such as psychology, logic, sociology and physiology. It is not necessary, however, that these studies be pursued in a formal way. Rather will it be profitable for the teachers in the normal schools to make themselves thoroughly familiar with such studies and to refer to them continually in the discussions on method. In this way methods will be based on reason rather than on mere imitation.

While at the normal school all teachers-in-training should continue to receive instruction in the school arts and in branches that are not yet generally taught or practised in the schools, such as manual training, nature study and school gardening.

The time now given to the Third Class course is altogether too short. It should be extended to at least twelve weeks. The rural school inspectors should continue to assist in this work. Their knowledge of school organisation and school management and of the problems of rural life make their services in the normal school particularly helpful. It would be a great advantage if the Third Class normal sessions were held at fixed centres. Better school and boarding-house accommodation could be secured, and the necessary equipment could be more readily provided.

The length of the Second Class session should be extended as soon as conditions in the Province will permit. It is impossible in four months —the length of the present session—to cover thoroughly the work outlined, and there is much that might be done which cannot under present circumstances be attempted. For example, it is impossible to review the work of the grades and to give instruction in school gardening, manual occupations and the like.

The proper performance of the work of a normal school demands the existence of a model school for purposes of observation, demonstration and practice. It is advisable to have as part of the model school a single, ungraded room after the pattern of a rural elementary school. Some convenient rural school would well serve the same purpose.

The courses of study for normal schools should, like the courses for public schools, be modified to suit local conditions. For instance, the work attempted at Regina, with its model school arrangements, should of necessity differ somewhat from that attempted at Saskatoon, where there is as yet no such school, but where there is the advantage of proximity to and co-operation with the University. It is especially necessary in training schools that teachers should have free play for their individuality. Only under such circumstances can they successfully impress their ideals upon their students. Therefore, in arranging the work from session to session, in examining these students and recommending them for certificates, they should, subject to the general supervision of the Department of Education, be as independent as possible. Efficiency will be promoted not by means of uniform examinations but through the selection of strong teachers.

TRAINING OF TEACHERS FOR HIGH SCHOOLS.

It is an advantage in every way for the teachers in high schools to have a knowledge of the aims, scope and methods of work in the elementary school. It would be a distinct advantage if they served for a year or two in the elementary school before taking charge of a department in the high school.

In addition to regular normal school instruction, which in Saskatchewan is intended mainly for teachers in the elementary grades, there should be observation and discussion of methods in the high school and special study along chosen lines; that is, those preparing to teach mathematics should have special opportunities for observation and practice in that field, and specialists in other departments should have similar opportunities.

In the opinion of some members of the commission the present system of conducting a second class course and a first class course concurrently does not seem to be economical. If all teachers were required to take the second class course of training, and if, in addition, high school teachers were given the opportunities suggested above, the rest of the first class course might well be extra-mural.

TRAINING FOR LEADERSHIP IN EDUCATION.

One of the most important considerations for any Province is how to secure a body of competent leaders in education—men and women who can serve as inspectors, supervisors and principals. It is clear that ability in these offices does not depend chiefly upon training, for natural talent, experience and scholarship are all important.

Yet training for the work is of great value and must be provided. It is as much the duty of the state to develop leaders in education as it is to develop leaders in agriculture, or in any other calling. The best served country is that in which experts direct the various departments of the service.

While attending elementary and secondary schools, students naturally acquire some power of leadership; and while attending normal school they receive instruction as to the duties of principals of schools. Further training in leadership is essential. If in the course of their work inspectors were to single out persons who seem to have marked ability as leaders; if these were encouraged to attend the University and take a course, the major portion of which was given to pedagogy; if this course were to be recognised as fully equivalent to any other course in arts; then it might be that some would willingly take advantage of it. In this way the University would come into vital and helpful relation with the public school. The leaders in education would be those who had not only natural and developed ability, but University training as well.

The course of study for such leaders in education should not be the ordinary course in psychology and logic with a little history of education and philosophy of education added. It should be a real course, and as practical as a course in medicine or agriculture. It should include a study of the sciences upon which education is based, and also a study of the history of education. The great proportion of time, however, should be given to familiarising the students with current educational practice. It should be open only to those who have had regular normal school training. All who have taken such a course should be capable of leadership in education. They should know what is being done to solve the problems of rural and urban education; of elementary, secondary and higher education; of general and technical education, not only in Canada, but elsewhere. A body of men trained in this way would be of the greatest value in shaping the educational future of Saskatchewan.

THE TRAINING OF UNIVERSITY STUDENTS.

It is important to enlist in the service of teaching as many University students and graduates as possible. Courses of instruction in the art of teaching and school management should be provided for undergraduates to prepare them to take charge of summer schools. Such instruction might be considered as equal to part of the course at the Normal school. It would be particularly helpful to those attending the Agricultural College who aimed at becoming either district representatives of the college or specialists in agriculture in the high school.

It may not be too much to hope that one step towards the solution of the rural school problem would be the formation of "large district" schools presided over by graduates of the Agricultural College, who had in addition taken a course at the Normal school. These men would serve not only as principals of such schools but as district representatives of the college or farm experts.

PROVISIONAL CERTIFICATES.

There are in rural schools a great many teachers who never reach the Normal school. One inspector reported that in his district nine out of ten teachers were teaching under permits. As it will be impossible to do without these for a few years by reason of the fact that the Province cannot supply the demand with regularly trained teachers, something should be done to render the work of these "permit" teachers more efficient. An increase in the inspectoral staff would manifestly be of great value, for expert advice would then be available for each novice in teaching. The Department of Education in issuing permits should furnish pamphlets of instructions specially prepared for teachers of this class and should demand that every holder of a permit put himself into immediate communication with the inspector of schools for his district.

CONVENTIONS AND INSTITUTES.

An important way of helping teachers—both those on the regular staff and those who hold provisional certificates—is through clubs, conventions and institutes. In many communities the teachers of six or eight districts might meet on Saturdays or once a month to discuss problems of administration and method. Nearly every town and village in the Province could be a centre for meetings of this kind and there will always be one or two experienced teachers to assist those with less experience. The principal or superintendent of town schools must be depended upon to work with his teachers through his own weekly or monthly meetings. At such meetings the discussions will necessarily touch upon every phase of school work. The high school and the Normal school cannot complete the training of the teacher. The most helpful work for teachers in graded schools, because the most direct, is that given at the meetings of the staff in every town or city.

The half-yearly convention or institute is of great assistance, the more especially when trained experts such as teachers in the Normal schools formally deal in a series of talks with the subjects of the programme or with subjects requiring special attention. This should be considered an important feature of Normal school activity. It is as necessary to the normal school teachers as to teachers in the regular public schools. It should be recognised that one of the highest functions of the Normal school is to furnish information and give inspiration to those in charge of schools. To insure permanency in institute work inspectors should be urged to give it their closest care, and notice should be taken of all gatherings in the reports of the Department of Education. It may be that if the University decides to give instruction in education, and properly correlates its work to that done in the Normal schools, teachers' institutes may ultimately be conducted as a branch of extension work.

RECOMMENDATIONS.

1. That in order to obtain a supply of teachers equal to the demand efforts should be made by educational authorities to encourage young men and young women of Saskatchewan to enter the teaching profession.

2. That legislative grants be graded to encourage nonprofessional and professional attainments in teachers.

3. That the number of school districts allotted to each inspector be limited to such an extent as to admit of their being visited at least twice a year under ordinary circumstances.

4. That in high schools and normal schools special attention be given in the teachers' course to instruction in the school arts—oral reading, oral and written expression, writing and spelling—and that the tests in these subjects be sufficiently strict to insure a high standard of efficiency.

5. That the Third Class Normal sessions be extended to at least twelve weeks and that such sessions be held as far as possible at fixed centres.

6. That as soon as conditions warrant, Second Class sessions be adequately lengthened.

7. That persons holding first class diplomas or equivalent standing be granted first class interim certificates upon their taking the course prescribed for second class certificates and that such interim certificates be made permanent upon the teacher's passing an examination in such professional reading and practice teaching as may be prescribed for such certificates.

8. That the courses of instruction and training in the Normal schools be modified to meet local conditions, and that each Normal school subject to the approval of the Department of Education make its own tests and determine the standing of its students.

9. That the University be requested to consider the advisability of providing a course in advanced pedagogy for purposes of leadership in education.

10. That the University and Normal schools be urged to further co-operate in order that undergraduates may receive instruction in pedagogy during their undergraduate course.

11. That the proper authorities be asked to consider the possibility of providing a course of training for graduates of the Agricultural College in order that while acting as district representatives of the College of Agriculture or as farm experts, they may also serve as principals of schools in "large districts" established under The School Act, or as teachers of agriculture in the high schools and collegiate institutes of Saskatchewan.

12. That teachers' institutes and reading courses as provided for in the Regulations be continued and extended.

COURSES OF STUDY AND TEXT BOOKS.

THE PUBLIC SCHOOL.

The Content of the Programme.

"A programme of studies is no mere invention of the schoolmaster. It is rather a world product, the result of some centuries of steady development in education. It contains probably the elements of the world's best wisdom in form not yet fully organised and digested. It has taken more than three centuries of European and American history to bring together the crude materials and to give them a merely temporary arrangement. Only those ideas have survived that had a strength and vitality born of truth." The influences at work modifying the course of study have been in the main, society with its urgent demands, and consideration for the child with his instincts and powers. Dr. McMurry has summed up the effect of the first of these influences in these words: "For thirty years now in this country, the science studies have been steadily pressed upon the attention of teachers, just as in the world at large science has everywhere extended and entrenched itself. In the same way the commercial, industrial and economic interest so powerful in business life has moulded and enlarged courses of study. The great moral, religious and intellectual forces outside of the schools have likewise stood strenuously for literature, temperance, history and civic instruction in schools. Manual training is a direct response to the demand for an experimental acquaintance with the fundamental arts of life and sympathy with millions of artisans in their daily toil."

It was fortunate that while the demand from society was being pressed so insistently both popular and scientific interest was turned toward the study of the child and his development. Both teachers and parents agreed that it was impossible to lead children with the weight of the whole social curriculum. And so the demand was modified by a consideration of the powers and needs of childhood. The programme then, as we have it today, is not an arbitrary list of topics arranged in haphazard fashion, but it is the result of careful experiment and long discussion in which the claims of the child and society were both fully recognised.

The explanation of all educational systems lies in this that "Man is educated by man for humanity." With changing conceptions of the rights and possibilities of humanity, there have been corresponding changes in educational practice. In China, the aim was to subject man to the family; in India, to the caste; in Thibet, to the order. The subjects of instruction and the methods employed differed with the differing aims. Persia, as a military state, emphasised riding on horseback and using the bow; Phœnicia, a commercial and trading centre, emphasised reading and writing as means of communication and attempted to belittle filial affection. Greece, with its passion for beauty, and Rome, with its love of the practical, followed practices that differed as widely as their ideals. Since the beginning of the Christian era the aims of communities and nations have been equally pronounced. Thus we have the ideals of religious consecration, of knightly behaviour, of good citizenship—with emphasis now placed on formal religious training, now upon training in courtesy and skill in arms, now upon knowledge of the classical languages, the natural science, or manual dexterity.

The controlling aim for this age seems to have been well set forth by Dr. Hanus: "Education should fit for happy and useful service"; or by Dr. Dewey, "Our task is on one hand to select and adjust the studies with reference to the nature of the individual, thus discovered; and on the other hand, to order and group them so that they shall most definitely and systematically represent the chief lines of social endeavour and social achievement."

Taking this view of individual development and social efficiency as the aim of education, the following scheme sets forth the relation of means to ends and justifies the programme as followed in the elementary school of most countries today:

Individual Development and Social Efficiency	Knowledge of the truth (science)...	Geography. Nature study. Arithmetic.
	Feeling for the beautiful (art)......	Drawing. Music. Literature.
	Knowledge of the right (conduct)...	Literature. History. Morals.
	Power to express in words..........	Composition. Spelling. Penmanship.
	Power to express in action.........	Manual work. Domestic science. Play and physical exercises.

Here it is assumed that the pupils are taught to observe, to hear and to read as means to acquisition, and the word "composition" is intended to include spoken as well as written expression. Constructive work and play are seen from the outline to be important school activities. It is also clear that though the subjects in these groups may be correlated, the five divisions must be represented on the course of studies for each grade.

The programme followed in Saskatchewan does not differ greatly from those in use in the other provinces of the Dominion, and bears a close resemblance to the programme in the Mother country and in the United States. Except for local colouring the subject matter is practically the same. The differences are chiefly in arrangement and points of emphasis. The course of study for the eight grades of the public school includes the following:

I	II	III	IV
Reading, Spelling, Language, Arithmetic, Nature study, Drawing, Writing.	Reading, Spelling, Language and composition, Arithmetic Nature study, Drawing, Writing.	Reading, Spelling, Language and composition, Arithmetic, Nature study, Drawing, Geography.	Reading, Spelling, Composition, Arithmetic, Nature study, Drawing, Geography. Grammar. History.

V	VI	VII	VIII
Reading, Spelling, Composition, Arithmetic, Nature study Drawing, Writing, Geography, Grammar, History.	Reading, Spelling, Composition, Arithmetic, Nature study and agriculture, Geography, History, Grammar, Drawing, Writing.	Reading, Spelling, Composition, Arithmetic, Nature study and agriculture, Geography, History, Grammar, Drawing, Writing, Business forms.	Reading, Spelling, Composition, Arithmetic, Nature study and agriculture, Geography, History, Grammar, Drawing, Writing, Business forms, Geometry.

To this should be added the course in manual training, sewing and household science, which is as follows:

Manual training—for rural and ungraded schools.

Grades I, II and III.

Modelling—

(*a*) Nature and art forms modelled in the solid—fruit and vegetables, animals, leaves, vessels and utensils, houses.

(*b*) Simple hollow vessel forms made by pressing out balls or coiling strips.

(*c*) Simple designs made from small balls and rolls.

(*d*) Geographical modelling—land and water forms.

(*e*) Illustration of stories, games, scenes.

Paper and Cardboard Construction—

(*a*) Tearing paper to represent objects.

(*b*) Folding paper to dictation.

(*c*) Cutting strips, fringes, pictures, etc., to teach the use of scissors.

(*d*) Using colours in border designs.

(*e*) Assembling objects to form pictures.

(*f*) Construction of geometrical figures in colours, in illustration of primary and secondary colours.

(*g*) Construction of doll's house and furnishing same.

(*h*) Making posters of scenes, games, stories.

Basketry—

(*a*) Simple weaving—mats, muffs, etc.

(*b*) Winding and braiding—picture frames, napkin rings, boxes, whisk holder, hat, etc.

(*c*) Knotting—handbags, string bags, etc.

Grades IV, V, VI, VII and VIII.

Modelling—

(*a*) Nature forms modelled in high relief on a background.
(*b*) Pottery.
(*c*) Designs modelled from historic ornament.
(*d*) Geographical modelling—continents.
(*e*) Illustration of scenes from history or literature.

Basketry—

(*a*) Continuous coil—sewn raffia mats and baskets.
(*b*) Sewn rattan mats and baskets—strap stitch, figure eight and lazy squaw.
(*c*) Rattan baskets—single and triple weave.

Note.—Certain rushes, reeds and grasses, if available, may be suitable for raffia in coil baskets. Willow may be used in place of rattan.

MANUAL TRAINING FOR UNGRADED SCHOOLS.

Grade I.

Kindergarten occupations, such as stick laying, pea and stick work, etc.
Modelling objects in clay or plasticine.
Paper work—tearing, folding and cutting.

Grade II.

Modelling, paper folding, cutting, weaving and simple construction.
Simple weaving.

Grade III.

Modelling. Paper and thin cardboard construction.
Raffia—winding, braiding, basket making.
Weaving—raffia, cord, yarn.

Grade IV.

Cardboard construction.
Basketry.
Thin woodwork.

Grade V.

Simple bench woodwork from working drawings.

Grade VI.

Bench woodwork from mechanical drawings.

Grade VII.

Bench woodwork from mechanical drawings.
Simple metal work.

Grade VIII.

Woodwork, including finishing.
Wood turning.
Simple metal work.

SEWING.

Grades III and IV.

Careful attention to neatness and cleanliness of work, also the position of the body while at work.

Talks upon tools and materials to be used. Thimble and needle drill, knots, simple stitch with wool on canvas, making articles applying stitch form, canvas sampler.

Use of tape measure, selvedge edge hems and seams on cotton cloth, cutting out simple patterns, darning on stockinet and on cloth, sewing on buttons, patching, simple knitting.

Grades V and VI.

Course in previous grades continued. More advanced stitch forms, overcasting and gathering, bands, sewing on buttons, hooks and eyes, plain darning, simple knitting, button holes, tape sewing, simple mending.

Cookery—

Simple talks on the equipment and care of the kitchen, measuring, necessity of cleanliness of person and of utensils, stoves and ranges, building and care of fires, home management, illustration of effect of heat on common food materials.

Elementary principles of cooking. Preparation of common foods such as the following:

(*a*) Eggs, fish, soups.

(*b*) Vegetables, cereals, breads, fruits, candy.

(*c*) Butter, bacon.

(*d*) Tea, coffee, chocolate, cocoa.

(*e*) Cake.

The table—setting, service, table manners.

Grades VII and VIII.

Sewing—

Course of previous grades continued and extended; darning, patching, button holes, plackets, use and care of sewing machine, French knots, cutting out and making white undergarments by hand or machine.

Cookery—

Course of previous grades continued and extended. Talks on the function of food, elements required by the body, study of common food materials.

Combination and cooking of various food materials.

In the evidence offered before the commission, there was little fault found with what appears on the programme of studies for the public schools. Two or three witnesses said in effect that the programme was overloaded, but when questioned closely confessed that there was no subject which they would care to see removed.

There were varying opinions as to what should be added to the programme. Some wished greater attention to play and physical culture; some advocated more manual work and greater attention to school gardening; some would see greater emphasis placed on direct moral instruction.

Taking the evidence as a whole, it favoured emphasis upon the standard subjects rather than upon the addition of new material. It was held that such subjects as composition, writing and spelling should be given more attention. The testimony offered goes to show that in many schools pupils are insufficiently prepared in these branches. There was a feeling that oral reading and speaking should receive more attention. There seemed to be an impression that in some way the activities of the school could be more directly related to the activities of the home and the vocation, although it was agreed that vocational education could not well begin before pupils reached the adolescent stage.

Although in various lands local conditions necessitate emphasis being placed now on one subject and now on another, there are certain instrumental studies such as reading, writing, arithmetic, which must always receive prominence. A knowledge of these is the key to all further progress.

The Arrangement of the Programme.

The programme must not only suggest the studies of the school; it should also set forth the order in which these should be taken. There is a logical and psychological order that should be followed in the presentation of truth. There must also be a balancing of impression, thought and expression. The programme prepared for Saskatchewan corresponds in its general arrangement to that used in the other provinces of Canada. The detailed instructions as to method are not so elaborate as those given in the Nova Scotia programme, but more explicit than those in most of the other provinces. Much is left to the teachers who are supposed to have a knowledge of general method. It might be an advantage if there were available leaflets giving instructions and setting forth approved methods of teaching the more important subjects of the programme.

The Adaptation of the Programme.

The greatest practical difficulty in education is not in framing a programme but in adapting it to local conditions. The evidence offered before the commission was rich in suggestion.

It was urged that a distinction should be made between rural and urban schools in the main body of the programme. The very fact that the work of the elementary school is laid out in eight grades causes the rural teacher to worry because she cannot recognise the distinctions. A four-grade programme which the teacher could at her discretion subdivide might probably be more serviceable. Because of the constant interchange of pupils between town and country schools, the rural and urban programmes should in their main divisions be very similar.

The adaptation of the programme to present conditions means that some studies that were once considered as of first importance will now be regarded as comparatively insignificant; and that some that were unknown in programmes twenty-five years ago will now occupy a prominent place. Arithmetic for girls is not deemed as important as it once was, and for both boys and girls studies like nature study, manual training and physical training are regarded as highly essential.

The necessity of adapting a programme to local needs is well illustrated by reference to the work that must be done in districts where English is not the vernacular. Those directing educational affairs, however, should constantly keep in view the necessity of adapting as far as possible the courses of study in public and high schools to the varying needs of the community.

THE HIGH SCHOOL.

The Content of the Programme.

The course for high schools is in effect a continuation of that for public schools. Apart from the fact that certain subjects are added, there is no real break in the continuity of the work. Algebra, geometry, and trigonometry are included in the mathematical group; botany, physical science and chemistry in the natural science group; and Latin, Greek, French and German in the language group. The work in English, history and geography is practically an extension of that covered by the public school course.

The course is arranged on a four years' basis and the subjects of instruction for the several forms are as indicated in the following table. The selection of subjects is left largely to the pupil and to the principal of the school.

Junior Form		Middle Form	Senior Form
Part I	Part II		
Reading,	Reading,	Reading,	Reading,
Literature,	Literature,	Literature,	English literature,
Composition,	English grammar,	English grammar,	English composition rhetoric,
Writing,	Composition and rhetoric,	Composition and rhetoric,	English language,
Spelling,	Spelling,	Spelling,	History,
Algebra,	History,	History,	Algebra,
Geometry,	Geography,	Arithmetic and mensuration,	Geometry,
Chemistry,	Arithmetic and mensuration,	Algebra,	Trigonometry,
Physics,	Algebra,	Geometry,	Physical science,
Botany,	Geometry,	Chemistry,	Chemistry,
Agriculture,	Chemistry,	Physics,	Biology (botany and zoology),
Music,	Physics,	Agriculture,	Latin,
Art,	Bookkeeping and business papers,	Latin,	Greek,
Latin,	Music,	Greek,	French,
French,	Art,	French,	German.
German.	Agriculture,	German.	
	Latin,		
	French,		
	German.		

In addition to what is herein set forth, provision is made for advanced manual work and household science. The course is as follows:

Manual Training—

Course for public schools reviewed and extended.
Modelling.
Mechanical drawing—geometrical, architectural, machine.
Cabinet making and wood turning.
Metal work—sheet, bench, forge, lathe.

Household Science—

Sewing—(*a*) Elementary stitches, sewing on of buttons, hooks, tapes; darning and mending; hemming; running; basting; making bags, potholders, towels, cuffs, etc.

(*b*) Advanced stitches applied to small garments; hemmed patch, fine mending, making and working button holes. Teaching use of patterns. Making underwear. Cutting out and making simple garments.

Cookery—

The course in public schools reviewed and continued. Teachers may make such changes as may be necessary to suit those who have not had such previous training.

The course should relate household materials and processes with chemistry, physics and bacteriology, and the work in the cooking laboratory should be closely associated with the work in the science laboratory.

Experiments with acids and alkalis; cookery and cleaning processes in illustration. Sanitary analysis of water; temporary and permanent hardness; household uses. Baking powder experiments. Milk analysis; its food value; value in cookery; effects of heat on milk. Examination of milk; milk products. Chemistry of stains; practical application. Food preservatives; household preservation of food. Analysis and value of starchy food; effects of heat; experiments of sugar. Experiments with fat and oils; effects of heat; value as food; fat; solvents and absorbents; soap making. Experiments with meat and eggs. Disinfection; insecticides.

Text-books recommended—The Chemistry of Cooking and Cleaning: *Richards and Elliott* (Whitcomb & Barrows, Boston). Elementary Applied Chemistry: *Lewis B. Allyn* (Ginn & Co., Chicago).

The Courses—

In the regulations governing high schools provision is made for a teachers' course, a general course, a University matriculation course, a commercial course and an agricultural course. Until recently industrial work was not provided for. This is now included, and a number of towns and cities in the Province have installed equipment and are giving well planned courses in various branches. Reference to this is made elsewhere in the report.

The teachers' course does not differ essentially from the corresponding courses in the other provinces. The subjects prescribed for each form are as follows:

Third Class, Part I—Oral reading, literature, composition, spelling, *either* chemistry *or* physics; *either* algebra *or* geometry; and *either* botany *or* music *or* art.

Part II—Oral reading, literature, grammar, composition and rhetoric, spelling, Canadian and English history, geography, arithmetic and mensuration, algebra and geometry, physics and chemistry; *either* agriculture *or* household science *or* bookkeeping and business forms.

Second Class, Part I—Oral reading, literature, spelling, English history and the Canadian Constitution, geometry, physics.

Part II—Oral reading, literature, grammar, composition and rhetoric, general history, arithmetic and mensuration, algebra, chemistry.

Note—In lieu of *either* physics *or* chemistry, a candidate may elect to take the examination in any *one* of the following: Latin, Greek, French, German, agriculture, household science.

First Class, Part I—English literature; English history and the English Constitution; geometry, trigonometry and *either* physics *or* chemistry.

Part II—English literature, general history, English language, composition and rhetoric, algebra, and any two of the following: physics, chemistry, biology (botany and zoology), Latin, Greek, French, German.

Note—If a candidate selects a science subject or subjects in Part II the same does not include that taken in Part I.

The general course is arranged primarily for persons wishing to extend their general education. It is so arranged that a candidate who passes an examination on any part may be allowed standing thereon in case he wishes at any future time to take up the teachers' course.

The university course covers the work prescribed for junior and senior matriculation to the University. The subjects taken are in the main the same as those prescribed for second and first class teachers' diplomas. In the opinion of the commission the co-operation between the University and the Department of Education should be continued and extended.

The commercial course, though not adopted in many centres, is growing in favour. As it includes a number of subjects valuable for purposes of general culture, as well as the usual commercial branches, this course should be very suitable to many young people in the towns and cities.

The agricultural course has been described elsewhere in this report.

The general tendency among students in the high school is to follow the University course or the course for teachers. In the opinion of your commissioners it would be wise for the University and the Department of Education to recognise attainment in the commercial and industrial branches for standing in the matriculation and the teachers' examinations. Neither the University examinations nor those arranged for teachers should completely determine the course of studies offered in the secondary schools. The needs of the community, which exactly correspond to the needs of the pupils, should determine the programme.

Adaptation of the Schools to the Needs of the Pupils.

The evidence submitted showed a considerable difference of opinion regarding the course of study for high schools. The small attendance was given as a proof that the schools are not meeting the needs of a large number of pupils. On careful examination, however, it was found that withdrawal from school antedated the high school period and was due to many causes, of which the nature of the programme was only one. Among the causes operating to promote early withdrawal from school are: (1) desire to earn money; (2) desire for freedom from school restraint; (3) love of the open air; (4) desire to be in the society of older people; (5) home duties; (6) an unpalatable programme; (7) poor teaching; (8) physical defects.

Any special course in a secondary school to be attractive to pupils and to commend itself to parents must have a definite life value. It must provide general culture or indirectly lead to some life calling. For this reason the commercial course and the agricultural course, as well as courses in industrial work, should be as much in harmony with existing methods in the outside world as possible. They should not be courses on paper. It is always possible wherever there is a high school to make use of the farms, the shops and the homes of the community for the purposes of illustration or demonstration.

One thing that will work against efficiency in the small high school is the fact that with only three or four teachers it is impossible to cover a wide range of work. It will be impossible for the majority of the high schools to have more than this number of teachers. The only solution seems to be for each locality to arrange its own courses from year to year to suit its peculiar needs. In several centres visited it was said that if the science teacher were to familiarise himself with the subject of agriculture and add instruction in this branch to the course, many country pupils would in all probability attend for at least a portion of the year. This is referred to more definitely in the section dealing with agricultural education. There is reason to believe that agricultural courses, technical courses and commercial courses arranged for either day or evening classes would be well attended.

A properly arranged high school programme in a city should be built around a central core of compulsory studies including language and literature, history, some forms of manual work and elementary science. Branching outward from this there might be on the one hand general culture with emphasis on English or classics or science; and on the other hand technical courses leading to teaching, to economics, to agriculture, to the trades and to home life. In the small high school specialisation must of necessity be limited, but the central core of instruction should remain constant.

Your commissioners do not consider it necessary to make any definite recommendations with regard to the courses of study, beyond advising that the course for public schools be rewritten to suit the classification of ungraded as well as highly graded schools.

TEXT-BOOKS.

One of the important factors making for efficiency in education is to have a series of wisely planned and well graded text-books in the several subjects of instruction. It is considered, however, beyond the scope of this inquiry to report upon the suitability of the various texts authorised for use in the public and high schools of Saskatchewan.

The choice of texts is largely a matter for educational experts in close touch with school requirements and with an intimate knowledge of the capabilities of children. With immense publishing houses competing in the production of suitable and attractive texts on all school subjects it is not thought wise, in a new Province like Saskatchewan, to have texts specially prepared. Economy and suitability should be taken into consideration in selecting texts from the wide range of books competing for the larger market. Even in such subjects as geography, botany, etc., where the need for local emphasis has to be recognised, it is usually wiser to *adapt* than to *originate*.

In the authorisation of texts care should be taken not to enter into long contracts, as experience goes to prove that such a course not infrequently results in the use of obsolete texts or in the continuance of inferior ones years after better have been produced.

CONSOLIDATION OF SCHOOLS.

A study of conditions in rural schools in Saskatchewan and elsewhere frequently reveals certain difficulties and defects. The school building usually consists of a single room in which one teacher with only a few pupils in attendance attempts to cover the entire course of the elementary school. Instruction is for the most part individual, and the incentive that flows from association and the sympathy of numbers is almost entirely wanting. For this reason school life is oftentimes dull and uninteresting both to pupils and teachers. The children attend irregularly; their progress is slow; and the teacher rarely remains longer than a year in the district. There is little either in the external appearance of the school or its inner life to appeal to the interest or pride of the community. The result is an attitude of indifference in the homes from which the children come and this reacts disastrously on the work of the school. The plan of consolidation or the grouping of several small districts into a large district with a school at the centre to which the children are conveyed is offered as the solution of the difficulties and the remedy for the defects.

It is claimed for this plan that as each consolidated school will have several teachers, with a corresponding number of pupils, it will make more or less accurate grading and classification possible, and that this classification will increase the amount and improve the quality of instruction. The fact that the children work in classes instead of individually or in very small groups gives opportunity for the play of sympathy and the stimulus that comes from generous rivalry in the class room.

It is furthermore claimed that the conveyance of children eliminates most of the waste that arises from unnecessary absence; that through these changed conditions the monotony of school life is removed, interest aroused and progress in learning accelerated; that the larger staff with conseqent division of labour makes it possible to widen the scope of the school by the introduction of subjects having special relation to rural life, such as nature study, household science and manual training, and also by the inclusion of a measure of high school work for older pupils; that, while the amount of higher work would, of course, depend upon the size of the school, it would be an immense gain to the rural community to have facilities within itself for carrying on the secondary education of its young people; that the improved conditions and larger remuneration would make for better qualified and more competent teachers with a longer tenure of office than now prevails; that the buildings and equipment would be adequate not only for the larger number of pupils, but for the wider range of service to be provided; and that with such facilities at hand, many of the older boys and girls who leave school before completing the elementary course would return to school during the winter months to continue their education, thus adding greatly to the enrichment of their lives and their usefulness as members of society; that the existence of a school large enough to touch the life of the people on many sides and vigorous enough to make its influence felt, would appeal to the pride of the community, which in turn would react on the life and influence of the school making it eventually the community centre to unify and give direction to those forces that make for progress and the uplifting of a people. How far these claims can be justified is to be sought in the experience of those communities that have tried this method of organisation. The origin of the plan of consolidation dates back to 1869, when Concord, Mass., first put into practical effect the conveyance of children to school at public expense. Since that time, it has gradually made its way until it has been adopted by almost the entire state of Massachusetts, and is found more or less extensively in three-fourths of the states of the Union.

The following extracts from the reports of school officials in a few representative states are given with a view to affording some insight into the scope, methods and results of consolidation:

Connecticut.—In the report of the state superintendent for 1910-11, the following statement appears:

"The reduction of population by reason of small families and the drift to the cities has brought it about that schools which enrolled 50 to 80 children fifty years ago have dwindled down to 5 or 10. The parallel reduction in taxable property has produced, side by side with a financial difficulty, an educational difficulty. Consolidation has not proceeded systematically in this state. There are five towns in which there is one school. During the last year, 2,292 children have been transported at the expense of $46,280.02 and 79 schools have been closed.

"The contract is awarded annually to a suitable person who makes the lowest bid. The drivers are somewhat bound by their contracts to specific duties. The cost varies from 10 cents per day per child paid to parents, to $2.50 per day to persons who own the horses and wagons. Some towns own the teams. The school committees define the routes. The longest route in the state is four miles. Sometimes children must walk to the school route to meet the wagon, but usually the children are carried from their doors.

"The expense of transportation economically and safely worked is not greater than the expense of continuing many schools. Transportation of a dozen or more scholars will cost from twelve to eighteen dollars a week. The fuel, incidentals and teachers' wages of a good school will amount to about the same.

"The testimony of experience is that when the roads are fair and the distance not too great, consolidation and transportation mean better schools."

The following statement of the secretary of the Board of Education is significant: "We find that good organisation and good teaching are more important than consolidation. Accordingly our main effort is not directed to consolidation."

Kansas.—Superintendent Fairchild gives the following information regarding consolidation in Kansas:

"I do not know of any special work that I have to add to our latest published report of the progress of consolidation in Kansas. However, I submit the following in the hope that it may be of some slight service:

"Over 6,000 children are now attending the consolidated schools in Kansas. In a great majority of these schools a certain amount of high school work is being done, in some cases four years' work being covered. Wherever established, consolidation has proved a complete success. Patrons are satisfied and the results in increased attendance, in enlarged opportunity for the pupils and in the neighbourhood interest have more than justified expectations.

"Here, as in other places, the progress has been rather slow. Then, too, the force of tradition and custom forms a strong obstacle in the way of the rapid formation of consolidated schools. However, wherever these changes have taken place the patrons are enthusiastic supporters of the plan. I know of no solution of the rural school problem that promises so well and so much as that of consolidation."

Minnesota.—The following questions amongst others were asked of the rural school commissioner, Mr. E. M. Phillips:

1. In general, what progress has been made in the matter of consolidation among the rural schools of Minnesota?

2. From your observation, what has been the success regarding the transportation of children?

3. Have there been any rules and regulations by the state department regarding the matter of transportation?

4. As a rule, how long are the routes and how long does it take to drive this distance?

5. Have you found any opposition to the plan on the part of parents?

6. What has been the effect on the attendance?

7. In general, what is paid the drivers? Do the drivers furnish the wagons?

The information given in his answers is valuable as indicating the trend of the movement in Minnesota:

1. Since the passage of The Holmberg Act, April 1, 1911, there have been effected about 50 consolidations in Minnesota, varying in number from two to eight districts apiece. During the previous eleven years under the old law, only 9 consolidations have been effected altogether.

2. I made quite an extensive investigation of the transportation problem this spring, interviewing many farmers at their homes. As a result of this I may say briefly that I found no case where children had suffered in safety or comfort through the transportation this year. I have found some flaws in the handling of the problem, but no difficulties which could not be readily remedied and which will be cared for the ensuing year. May I add that we have all possible conditions, favourable and unfavourable, for the transportation of children in the districts undertaking this work in Minnesota this year.

3. The only regulation of the state department regarding the transportation is the establishing of a standard conveyance for this purpose. In addition to this the department has ruled that no children shall be transported over six miles, and strongly recommends that no project be undertaken where any child must be carried over 5 miles.

4. We have no routes over 6 miles long, and very few of these. The average length of route is a trifle over 4 miles. The reports show that during the worst roads the wagons drive about four and a half miles an hour, when the roads are in good condition about five and a half miles an hour.

5. Nearly all of the opposition to transportation on the part of the parents preceded a trial of the plan. Generally speaking, I found that opposition which existed previous to consolidation has entirely disappeared after a year's trial.

6. Attendance has been measurably improved. In some cases, from 70 per cent. to 94 per cent., although the average would not be so high as that—probably from 80 to 90.

7. The lowest salary paid to a driver is $15 a month. This has been paid this past year to a boy driver, but the practice will not be sanctioned by this department. The highest salary paid is in the northern part of the state, where team hire is extremely high. On one route $75 per month was paid. The average for the state this year is a little less than $45 per month. The drivers in no cases furnish the wagon. This is the property of the district.

North Carolina.—L. C. Brogden, supervisor of rural elementary schools of North Carolina, in his bulletin on the consolidation of schools, says:

"While it is obvious that the educational advantages offered by the union school of two teachers are far greater to the educational opportunities offered by the one-teacher school, yet there is the probable danger of feeling content with this simplest type of consolidation, this union school of the two-teacher type. Too often after having formed union schools of the two-teacher type, do we feel that we have reached the limit of practicability in the consolidation of schools, and that a larger type of consolidation is not necessary for a high degree of efficiency. While it is true that in many instances the limit of practicability has been reached in the formation of this union school of the two-teacher type with reference to the walking distance of the pupils, yet to regard this type of school as the final goal in our efforts for consolidation, to regard it as the final step essential to be taken, would be a most unwise conclusion to reach, and would result in preventing the highest possible development and efficiency of our rural schools; for like the one-teacher school, this two-teacher type of school has its own natural limitations that prevent it from ever becoming the most efficient and economic type of the consolidated school."

North Dakota.—The following quotations give information respecting the progress of consolidation in North Dakota:

"There are 95 schools in the state, formed by combining two or more schools into one, or by transporting pupils at public expense, and where at least one of these features has been adopted by popular vote as here provided. These are the schools that are recognised in law as consolidated schools.

"There are 274 schools in the state where pupils are transported at public expense in accordance with the provisions of this clause. Fifty-nine of them are often called "consolidated" schools, as in the case of Lakota and McVille in Nelson county, the former paying $709 for the transportation of pupils last year. These and many others serve a larger territory and more pupils than certain other schools where people have taken a formal vote and that are recognised in law as the only genuine article in the way of consolidation.

"*The transportation of pupils to the central school presents the greatest problem in connection with our subject.* In all cases the children residing more than a reasonable distance from the school must be transported by proper conveyance and returned to their homes at the end of the session in the same manner. This usually entails a large item of expense, which is at most objected to by those who favour the continuance of the old system. However, when we consider how very small most of our schools are and how inefficient, it may well be claimed that they are even more expensive and certainly far more wasteful than the new type.

"There are many methods of dealing with the transportation problem that prevail in the state, and we shall treat them very briefly under two heads:

1. *Public Transportation.*—Pupils are transported by public conveyance, usually a covered bus, at the expense of the district. It generally requires four or five rigs for a fairly well settled township, and the payment ranges from $25 to $60 a month for each. A good illustration of this system is found in Logan Centre, Grand Forks county, where five busses are employed at a cost of $40 a month for each. In Logan Centre and many other cases the busses are owned by the district, and only the drivers and horses are hired, but in still other instances the wagons as well as the horses are furnished by the drivers.

2. *Family Transportation.*—Parents are made responsible for the transportation of pupils, and may be paid by the district or not. Family transportation is practiced in North Dakota under four forms, namely:

(*a*) All pupils in the district receive a fixed amount for each day's attendance, ranging from 10 cents a day in some districts to 25 cents in others.

(*b*) The allowance for transportation is graduated according to distance from school and varies from 5 cents to 25 cents per pupil for each day's attendance.

(*c*) In some districts the parents that live very far from school are paid a stipulated sum for all the children in the family. In the Sheldon district, Ransom county, one family is paid $5 per month and another is paid $2, and all others bring their children free of charge.

(*d*) All parents transport their children free of charge to the district. This is, no doubt, done in many districts and it is now the practice in the Webster school, of which Superintendent J. C. West writes as follows: "We do not pay people for having their children educated. The merchant does not pay patrons living more than two miles away to come in. If their farms are far from school it is unfortunate, the same as if they are far from the elevator. Besides, there are no farmers who do not have an idle horse that can be put to this use with very little expense to them, but a system of pay increases taxes greatly. These are the arguments we use and they have worked, but they would not work everywhere. We at first ran busses at public expense also, and if any person now insisted on enforcing the law (a poor one) and would not listen to reason, we would pay him.

"Although there may be objections to any and all of these methods of transportation, it is plain that the difficulties can be overcome and that they will be met successfully by all except those who fail to recognise the shortcomings of the present type of school."

Indiana.—This state has probably gone further in the matter of consolidation than any other state in the Union. The reason that Indiana has been able to accomplish so much is that the country school system is based upon the township unit of organisation, with one man (the township trustee) in charge of all the schools in the township. For example, in a township of six miles square one usually finds six to eight schools. Instead of eighteen to twenty-four school officials, as in all states in which the district system is in vogue, one man looks after the interests of all these six or eight schools. He erects the school buildings, keeps them in repair, selects teachers, fixes their salaries, etc., in fact, does everything that is done for public education in that township.

For a number of years the township trustees in Indiana were engaged in organising township high schools. In 1908 there were almost 1,000 of these schools in the state. The country boys and girls attended these high schools from two to four years. In the early part of this movement of organising high schools, patrons who sent their children to the township high schools requested the trustees to allow them to send their younger children in the same conveyance. These requests were often granted, and the children recited in the grades while their older brothers and sisters recited in the high schools.

This movement grew so rapidly that the enrolment in large numbers of the district schools near the high schools was reduced to such an extent that the trustees in many instances decided to "abandon" these small schools and transport the children to the township high schools. In this way consolidation began.

In 1903 the Legislature enacted a law providing that when two-thirds of the patrons in any district petitioned the township trustee for the abandonment of the district school and the transportation of the children from such abandoned school to the township high school, the trustee was compelled to carry out the provisions of the petition. Under this law several hundred small schools were abandoned.

In 1907 the Legislature passed an Act providing for the discontinuance of all township schools with twelve pupils or fewer, and for the transportation of pupils. The Act also permits the abandonment of schools with fifteen or fewer. In all cases of abandonment the trustees are required to furnish free transportation in sanitary wagons for all pupils from the abandoned school to the central school. The drivers of the wagons are held responsible for the safety and conduct of the children to and from the central schools.

In this state, as stated above, the township is the unit of the school system. The interests of the township are generally common. With strong teachers in the central school, who are capable of taking the initiative in adjusting the school work to the needs of the community, it is safe to say that this law was a long step in the direction of putting the country child upon the same plane with the city child in school advantages, and in a good many respects the country child as a result of this law has superior advantages. To quote from a report:

"The people in Indiana are pleased with consolidation. Very few of them ever petition the school officials to return to the old district school system. Consolidation has brought longer terms, a better graded system, better equipment, better qualified teachers, high school privileges for the country children and work in agriculture and domestic science. Splendid sanitary buildings have been erected in hundreds of country communities. The country children therefore enjoy just as good advantage in every way as do the children in the city. Consolidation has tended to bring about equal opportunity to all the children in the state."

Wisconsin.—The Wisconsin Commission on Agricultural and Industrial Training reports as follows:

"The movement for the consolidation of school districts and the transportation of pupils to the large school is on, the country over. The advantages of a consolidated school have been demonstrated in too many states and under too many conditions to be open to debate. From the standpoint of administration, finance, general education and agricultural training, this enlarged school shows the way out of many of the present difficulties.

"It may be stated that, until the State of Wisconsin sets itself deliberately to the task of organising country education on the basis of an administrative unit, larger than the school district, as it now exists, comparatively little will be accomplished in the way of establishing vocational training that will contribute largely to the problems of our agricultural population and of agricultural production. Notwithstanding numerous enactments of the Legislature during the past ten years looking toward the consolidation of schools, little or nothing has yet been accomplished in this state in this direction. Without doubt, climatic conditions and geographic situations have hindered the rapid progress of this movement. Nevertheless, there are numerous localities where no physical obstacles bar consolidation and where the district schools are too small to be effective."

Manitoba.—The experiment being carried on in Manitoba is, however, the most valuable for purposes of this report, as the conditions in that province are almost identical with those in Saskatchewan. The following extracts from the special report of the Department of Education for 1913 explain the conditions under which consolidated districts are formed and the extent to which the department encourages this mode of organisation by financial assistance.

FORMATION OF A CONSOLIDATED DISTRICT.

A consolidation may be formed without any limitations as to area, if the trustees make and carry out suitable arrangements for conveying to and from the school, once a day each day, all pupils who would have further than one mile to walk in order to reach the school. It is not necessary that all the children transported be conveyed in the regular van, but provision may be made allowing various families not living on a van route, to arrange for the transportation of their children; and such families may be paid by the school board for doing this work.

Non-union Districts.

It sometimes happens that all the lands intended to be formed into a consolidated district are contained within the boundaries of a single municipality. The procedure in cases of this kind is set down in The Public Schools Act, section 81, as follows:

"81. Every council of a rural municipality shall have power by bylaw:

"(*b*) To unite two or more districts in the same municipality into one, in case the trustees of each such district, or of a majority of number of such districts, pass resolutions requesting the council to pass such bylaw and it shall not be necessary for the trustees to call a meeting of the ratepayers before passing such resolution unless a trustee present at a meeting of the trustees at which any such resolution is proposed dissents therefrom, in which case the same shall not be proceeded with until after the decision of the ratepayers, at a meeting called in the manner provided by this Act, is obtained upon the question whether the district desires such union or not, and the trustees shall then act in accordance with the decision of such meeting."

An appeal will lie from the action of the council in this connection, and any four ratepayers may proceed as set out in section 83, as follows:

"83. A majority of the trustees, or any four ratepayers of one or more of the school districts concerned, may appeal to a judge of the county courts of the judicial district or county court division in which such school district or districts is or are situated or partly situated, against any bylaw passed by the municipal council for the formation, division, union or alteration of their school district or districts, or against the neglect or refusal of the municipal council (an application being made to it by the trustees or any four ratepayers concerned) to form, divide, unite or alter the boundaries of a school district or school districts within the municipality."

Provision is also made for adjusting the accounts between the various districts entering into a consolidation, as follows:

"91. On the formation, dissolution, division or alteration of any school district in the same municipality, in case the trustees of the districts interested are unable to agree, the inspector and two other persons appointed by the council as arbitrators shall value and adjust in an equitable manner all rights and claims consequent upon such formation, division, dissolution or alteration between the respective portions of the municipality affected, and determine in what manner and by what portion or by whom the same shall be settled; and the determination of the said arbitrators or any two of them, shall be final and conclusive."

Union Districts.

When it is desired to consolidate school districts comprising lands situate in more than one municipality, the procedure is indicated in section 123 of The School Act, as follows:

"123. The following shall be the procedure for the formation, alteration or dissolution of union school districts:

"(*a*) On the petition of six ratepayers of the territory in question to the respective municipal councils concerned asking for the formation, alteration or dissolution of a union school district, each municipal council so petitioned may appoint an arbitrator (who must not be a member of the council), notice of which appointment, together with a copy of the petition, shall be sent by the respective clerks to the inspector or inspectors, who shall be *ex officio* arbitrators."

The assets and liabilities of the various districts formed into the union consolidation are adjusted in the same manner as in nonunion districts.

FORM OF PETITION.

The following form of petition may be used for presentation to the Municipal Council asking that they take the necessary steps towards the formation of a consolidated school district:

To the Reeve and Council of the Municipality of

The petition of the undersigned resident municipal taxpayers humbly showeth:

(1) That they desire the following lands to be included in a school district:

(2) That a suitable school site now proposed by your petitioners is obtainable at

(3) That the following lands above proposed to be included in the new district are at present included in other districts:

The school district of , sections

The school district of , sections

(4) That the name proposed by your petitioners for the new district is the Consolidated School District of

and the place for the first school meeting shall be at

Section Tp. Rg.

If the lands named in the petition are included in two or more municipalities, the petition must be addressed to the local Inspector of Schools and the councils of the municipalities concerned.

GRANTS.

No school grants are lost to the district by reason of consolidation. For example, if three districts consolidate and it is found that two of the teachers can do the work, the consolidated district receives, nevertheless, from the municipal council or councils and also from the government of the province the full grants for three teachers.

In addition to these grants, every district, upon consolidation, receives the sum of $500 to help defray the cost of organisation, and to assist in the purchasing of vans and equipment. Besides this, the Department of Education pays to each school district yearly, one-half of the amount expended by such district in transporting the children. For example, if the cost of transportation for the year amounts to $1,200, the departmental grant for that purpose will amount to $600.

The department has also been making liberal grants towards the salaries of special teachers employed to give instruction in agriculture, manual training and domestic science; and every encouragement is given consolidated districts to furnish instruction along these lines.

VAN DRIVERS' REPORT.

In some of the consolidated school districts a form of daily report similar to the following is used by the van driver. These reports are inspected daily by the principal of the school, and once a month a report is given to the trustees and the inspector.

Daily Report of School Transportation.

To the principal of..................................school.
Time of starting..............................
Time of arrival..............................
Enrolment..............................
Attendance..............................
Deportment..............................
Date 191
Driver

The Department of Education has prepared a special form of contract between school district and van driver, and a form of bond to be entered into by the driver and his sureties. These are as follows:

APPROVED FORM OF CONTRACT BETWEEN SCHOOL DISTRICT AND VAN DRIVER.

MEMORANDUM OF AGREEMENT made the day of
in the year of our Lord one thousand nine hundred and
BETWEEN (*name in full*) of the post office of (*occupation*) in the Province of Manitoba hereinafter called the Contractor of the First Part, and the Consolidated School District of
No. in the Province of Manitoba, hereinafter called the School District of the Second Part.

WITNESSETH that the parties hereto, in consideration of the covenants, agreements and payments hereinafter mentioned, do hereby agree with one another as follows:

1. The contractor agrees to furnish a team of horses, harness, robes and driver suitable and sufficient for the purpose and acceptable to the Trustees of the School District and to convey to and from the Consolidated School building on each school day during the term of this agreement, all the children attending such school and living in the territory tributary to the route assigned to the contractor and known as route No. , as shown on a plan of routes filed in the office of the secretary of the said

consolidated school district, identified by the signature of the contractor and sealed with the seal of the school district and known as Plan No. , a copy of which is hereunto attached and marked as Exhibit A; for the period between the day of the date hereof and the day of A.D. 191 for the sum of dollars per day, to be payable each not in advance.

2. The school district shall provide the van or conveyance and the contractor shall at all times provide that the conveyance shall arrive at the school aforesaid, at least five minutes before the opening hour, and shall leave the school immediately after the closing hour, the children to be taken on and left off at such points on the route of travel as are nearest their respective homes, the driver of such conveyance to be at all times courteous to the said children while using the conveyance in his charge and to report forthwith any misconduct on the part of any of the said school children while in his charge to the principal of the said school.

3. The contractor agrees to see that any heaters provided by the school district are properly attended to and kept in good working order during the trips to and from the school building during such period as the trustees of the school district shall direct, and further covenants that the average rate of travelling of the said conveyance both going to and returning from the said school shall be at all times during the term of this contract not less than six miles an hour.

4. The contractor shall be responsible and hereby covenants that all reasonable care shall be taken of such conveyance and equipment as may be supplied for his use by the said School District from time to time as well as of all equipment furnished by the said School District for the comfort of such school children from time to time and shall deliver such conveyance and all such equipment to the School District at any time upon demand made by the said school district.

5. The school district may at any time, by giving notice in writing to the contractor, make any change in the route aforesaid, such change to take effect at the expiration of three days from the giving of such notice, and the contractor shall be bound to comply with such a change of route and to follow the new route laid down by the school district for the balance of the term covered by this contract without extra remuneration if the said change does not entail a greater mileage being travelled by him than the present route, provided that any excess in mileage over the mileage to be travelled over the route as laid out on the date of the execution of this agreement to be travelled in consequence of such alteration of route shall be paid for by the school district at the same rate per mile as is now payable under this agreement.

6. The contractor shall give a bond to the school district at any time upon demand of the school district, satisfactory to the school district for the sum of dollars for the faithful carrying out of his contract hereunder.

In Witness Whereof the said contractor hath hereunto set his hand and seal and the said school district hath caused to be affixed its corporate seal and the hand of the chairman and secretary treasurer thereof

Signed, Sealed and Delivered
in the presence of

.... (Seal)
.... (Seal)
.... (Seal)

APPROVED FORM OF BOND FOR VAN DRIVER.

KNOW ALL MEN BY THESE PRESENTS that we (*name in full*) of the ....in the Province of Manitoba (*occupation*) and (*name in full*) of............of.... ....in the Province of Manitoba (*occupation*) are held and firmly bound unto the School District of... .. .. Number......in the Province of Manitoba, in the penal sum of.......... Dollars ($......) to be paid to the said School District No....... or its successors or assigns, for which payment well and truly to be made we jointly and severally bind ourselves, our and each of our heirs, executors, administrators firmly by these presents.

Sealed with our seal and dated this........ .day of. .... 19...

....(Seal)
....(Seal)

The condition of this obligation is such that if (*name in full of contractor*) of the....... ....of...........in the Province of Manitoba (*occupation*) shall well and faithfully carry out and perform all the duties, covenants and obligations which he the said (*name in full of contractor*) covenanted and agreed to carry out and perform in a certain Contract for the transporting of school children to and from the school building of the said School District of.... ......No.. . .made between him as Contractor and the said School District of............No.......and dated the......day of... ....19.., then this obligatoin shall be void, but otherwise shall be and remain in full force and virtue.

Signed, Sealed and Delivered
in the presence of
....

....(Seal)
....(Seal)

The following are copies of the contract and bond entered into between school corporations and wagon drivers in the State of Indiana:

This contract this day entered into by and between school trustee of township county, of the first part, and , as driver of a school wagon herein known as party of the second part, of county, state of , Witnesseth:

That the party of the first part has this day employed the party of the second part at the sum of $ per day, to drive the school wagon on the route known herein as number , and which route is more particularly described as follows, to wit:

Beginning at the home of , which home shall be known herein as stop number one, and thence

and arriving at school between and a.m.

And said second party hereby agrees to drive said route and transport all the children of school age, who now reside in the homes on the route designated, or those children who may move into homes along and adjacent to said route during the school term.

The party of the second part agrees to use every care and precaution in the way of protecting the children transported as aforesaid, and to maintain order and discipline at all times, and to treat said children kindly and impartially, and those children who refuse to obey shall be reported by the second party to the first party, who on proper assurance of their continued disobedience, shall have the power, and it shall be his duty to exclude them from further advantage or admittance to said wagon.

The second party further agrees that he shall at all times while driving said route come to a full stop at each point where children are taken into the wagon or let out, and he shall also come to a full stop before crossing any steam or electric railway and ascertain positively whether there is any danger, and he agrees to avoid all danger in case danger is recognised, if possible.

And the second party at no time during the school term shall allow the wagon under his control to stand out in the storm or cold, and shall keep the same clean, comfortable, warm and properly ventilated at all times while in use for the children.

And second party agrees to abstain absolutely from the use of tobacco and intoxicating liquors in any form, and prevent others from using them about the wagon while children are therein; and he further agrees to perform personally all duties as laid down in this agreement, unless permission for a substitute be given by the party of the first part, who shall designate who such substitute shall be.

And the party of the second part hereby agrees to make all reports called for by the party of the first part, or by those authorised by the party of the first part who call for them, and also agrees to wash and clean up said wagon at the end of the school term, and place it in the school barn or elsewhere as directed by the trustee of said township without any extra compensation.

The second party further agrees that no other use shall be made of the school wagon above mentioned without permission of the party of the first part, and the same shall be well cared for and protected at all times by the second party as far as possible.

Any violation on the part of the second party of any of the provisions of this contract shall be sufficient cause for declaring it forfeited by the party of the first part, and the party of the second part shall be responsible on his bond executed in connection herewith for such violation.

Witness our hands and seals this day of

.. ..

Party of the First Part.

....

Party of the Second Part.

CONTRACTOR'S BOND.

Know all men by these presents that I, , as principal and as surety are hereby firmly bound y these presents to of township county in the penal sum of $, for the payment of which we jointly and severally bind ourselves, our heirs, executors and administrators.

Sealed this day of 19 .

The condition of the above obligation is that the said above has been employed as driver of the school wagon on school route number in township onty during the school year of 19 and 19 .

Now if the said shall faithfully and impartially discharge his duties as provided in the contract of employment in connection herewith, and in accordance with all the terms and conditions thereof, then this bond shall be null and void, otherwise to be and remain in full force and effect in law.

Approved by me this day of 19 .

The following table shows the number of children enrolled at the several schools listed, the number of pupils that have to be conveyed and the average attendance of the number enrolled and of the number conveyed:

A.—ENROLMENT AND AVERAGE.

DISTRICT	Children of school age in district	Children enrolled	Children conveyed	Average attendance for whole school	Average attendance of those conveyed
Holland	195	189	84	158	62
Virden	506	484	26	419	19
Starbuck	127	118	65	..	..
St. Andrews	86	73	25	37	16
Brickburn	298	262	81	196	76
Sarahville	123	97	28	..	..
Warren	96	93	66	54	48
Teulon	182	178	38	138	32
St. Patrick	49	44	39	..	..
Dauphin	956	744	40	644	36
Sperling	146	129	79	79	50
Birtle	..	133	21	95	15
Hazelridge	..	66	46	..	40
Dominion City	..	136	36	116	34
Whitemouth	..	94	..	82	..
Durban	..	90	45	65	37
Makaroff	..	70	69	46	45
Manitou	..	..	80	..	73
Solsgirth	34	32	18	28	15
Shellmouth	67	45	..	..	..
Beulah	..	42	14	26	12
Isabella	44	40	30	34	23
Brigdenley	24	24	19	19	16
Arnaud	30	25	11	20	10
Moore Park	40	38	23	24	13
Darlingford	86	96	40	66	37
Melita	263	263	42	159	26
Elphinstone	60	..	17	37	12
Decker	..	35	30	..	..
Eagleton	47	45	35	32	22
Elgin	240	237	104	152	72
Snowflake	..	80	53	60	46
Benito	..	86	40	..	28
Flora	..	31	17	17	..
Lyleton	77	77	31	44	..
Langruth	..	32	..	22	18
Rivers	..	180	53	..	46
Kelwood	125	123	63	71	36

Table No. 2 gives particulars, number enrolled, number and capacity of vans, length of route and amount paid to drivers:

TABLE NO. 2.

C.—VANS, VAN ROUTES AND DRIVERS, ETC.

District	Children enrolled	No. vans	Capacity of vans	Length of van routes in miles	Amount paid van drivers
Holland	189	4	18, 18, 14, 20	4½, 6½	$3.00, 3.00, 2.40, 2.10 per day.
Virden	484	1	24	9½	$3.50 per day.
Starbuck	118	4 and 2 private	22, 22, 22, 24, 4, 4	4½, 4½, 3½, 2	$2.90 to 3.25 per day.
St. Andrews	73	1	30	4	$3.50 per day.
Brickburn	262	4	20	5, 4½, 5½, 6½	$540, 550, 400, 650 per year.
Sarahville	97	3	16	6, 6⅓, 6½	$550, 500, 500 per year.
Warren	93	4	20, 21, 16, 8	7, 6½, 6, 2	$650, 635, 700, 250 per year.
Teulon	178	3	Each 16	3, 2½, 3½	$375 per year.
St. Patrick	44	2	20	7½, 7	$2.62, 2.87 per day.
Dauphin	744	2	22	6, 8	$3.00, 4.25 per day.
Sperling	129	4	20, 20, 20, 14	7½, 5¼, 7½, 4¾	$3.95, 3.20, 3.45, 2.75 per day.
Birtle	133	2	16	9, 5	$600, 500 per year.
Hazelridge	66	2	20	7, 6	$3.00 per day each van.
Dominion City	136	3 vans and 1 buggy	20 each	6, 7, 3½	$3.00, 3.00, 2.00 per day.
Whitemouth	94	4	20 each	6, 3½, 3, 4	$3.40, 2.50, 2.00, 2.50 per day.
Durban	90	3	18 each	7½, 5½, 3½	$4.80, 4.00, 3.00 per day.
Makaroff	70	4	20 each	7½ to 11½	$500 to 800 per year each van.
Tummell	..	4	22	10, 6, 6½, 7	$3.25, 2.75, 3.50, 3.75 per day.
Fairfax	32	3	20		
Oak Bluff	45	2	20		
Manitou	42	6	20	7, 7½, 7½, 9, 7, 6	$4.00, 4.00, 5.50, 5.00, 4.00, $3.75 per day.
Solsgirth	40	2	22	6, 4½	$500, 475 per year.
Shellmouth	24	None			Pay privately to convey children.
Beulah	25	1	20	5½	$542 per year.
Isabella	38	2	14	11 and 13	$525, 550 per year.
Brigdenley	96	2	10	6, 6½	$3.25 per day.
Arnaud	263	1	8	4	$2.50 per day.
Moore Park	..	2	12	9, 11½	$3.50, 4.60 per day.
Darlingford	35	4	16	5, 5, 3½	$2.50, 2.50, 2.25, 2.00 per day.
Melita	45	3	20, 15, 15	5, 8, 8½	$2.75, 3.50, 3.75 per day.
Elphinstone	237	2	12	6, 6½	$600 each driver per year.
Decker	80	2	16	9, 8	$3.00, 2.60 per day.
Eagleton	86	3	12	9, 7, 4	$3.00, 2.85, 2.25 per day.
Elgin	31	7	6x18, 14	9, 8, 7½, 13¼, 6½, 8½, 11	$700, 730, 800, 850, 695, 800, 800 yearly.
Snowflake	77	3	Each 16 to 20	3½, 3½, 4	$3.25, 2.90, 3.00 per day.
Benito	32	3	Each 14		
Flora	180	2	16	7, 7½	$3.50, 3.20 per day.
Lyleton	123	1	20	8½	$3.25 per day.
Langruth	..	2 vans and 4 rigs	11, 3	2½	$1,000 for vans.
Rivers	..	4	18	9, 8, 7, 5½	$5.00, 4.00, 4.00, 3.50 per day
Kelwood	..	2	24	6, 11	$2.25, 15c per mile travelled.

The following sketches are taken from the reports of secretary treasurers of typical consolidated school districts.

RIVERS.

"The Consolidated School District of Rivers went into operation with the opening of the schools after the midsummer vacation of 1913. The districts united were Pendennis, Aetna and the village of Rivers. The consolidated district contains 37 sections of land, including the townsite.

"The school buildings in the town of Rivers were able to accommodate the pupils from the several districts, and have been utilised by the consolidated district. The school buildings are on grounds comprising three and a half acres of land, and consist of a stone and brick school house with four class rooms and a building known as the "Annex" containing one class room. The larger building is heated by a hot air furnace and ventilated by an approved gravity system; the smaller building is heated by a stove. An abundant supply of good water is obtained from a well on the school grounds.

"The value of the school buildings and inside equipment is approximately $12,000, and the grounds are worth $2,000. Five teachers are employed at monthly salaries of $110, $70, $65, $60 and $60 respectively.

"Four vans convey the children from the rural parts of the district to the school. The cost of each van wagon was $250, to which must be added to complete the equipment the sum of $26 paid for each sleigh. The different van routes are nine, eight, seven and five and a half miles long. The respective van drivers are paid for operating these routes, $5, $4, $4 and $3.50 per day respectively.

"The children of one family are conveyed to the school under the provisions of section 95 of The Public Schools Act.

"The system of transportation has up to the present time given, I believe, entire satisfaction. Not a trip was missed by any van driver up to the end of 1913.

"The total enrolment of the school for the term was 180, and the number of children conveyed was 53. The average daily attendance of those conveyed was 45.58 or 86 per cent. The special school tax levied on the rural lands in 1913 was $24 per quarter section.

"Manual training is being taught in two rooms of the school and instruction in agriculture will be given during 1914."

WHITEMOUTH.

"This district was formed in April, 1912, by adding to the old district of Whitemouth, lands which up to that time had not been tributary to any school. The consolidated district now comprises 70 sections and possesses an excellent five-acre site.

"A new two-room building was erected at a cost of over $3,000. A ventilating heater, Smith system, was installed in each room. Two teachers are employed, the principal at a salary of $800 per year, and the assistant at $600.

"Four covered vans are in operation. These cost $200 each and were purchased from the Grey-Campbell Company. They are so arranged that the driver can sit inside with the children, and in the winter time the van bodies can be attached to sleigh-runners, which were purchased at a cost of $30 per set.

Van Route	Length	Cost of operation
No. 1	6 miles	$3.40 per day
No. 2	3½ "	2.50 " "
No. 3	3 "	2.00 " "
No. 4	4 "	2.50 " "

"We have never had any difficulty in procuring satisfactory drivers, and not one of our vans missed a trip during 1913.

"The total enrolment in our school is 94, with an average attendance of 82 for the year. Twenty children have been added to the roll since consolidation took effect.

"The special school tax for the district during the year 1913 was 18¼ mills.

WARREN.

"The consolidated school district of Warren, situated in the municipality of Woodlands, comprises the three former separate school districts of Hanlan, Meadow Lea and Invicta, which were consolidated in the spring of 1910. This is an instance of a purely rural consolidation. For some time after consolidation each school district kept its school in operation separately as before, but under the supervision of the new board of trustees, who on election proceeded at once to make arrangements for a site on which to erect the new consolidated school building.

"At that time the ratepayers were divided in opinion as to whether to erect a new building or move one of the old ones from the other districts alongside the Hanlan building and use as a two-roomed building until consolidation was given a trial. However, at the annual meeting of ratepayers in 1910, the trustees were empowered to submit a bylaw for authority to raise funds by debentures for a period of twenty years to cover expenses of purchasing a suitable site and erecting thereon a new school building. By a large majority, authority was given to raise $10,000. Owing to weather conditions and a scarcity of labour, the building was not completed until September 5, 1911, and it was then immediately occupied.

"In the meantime the trustees had disposed of the school properties of the merged districts and made arrangements for the conveyance of the children to and from school according to The School Act. About $450 was realised from the sale, $375 being in cash and the remainder being credited to the districts for equipment turned over by them to the consolidated district.

"The school site consists of six acres, which it is the intention to lay out in spacious lawns, grounds for football, baseball, basketball, croquet and tennis, and large gardens and experimental plots. The trustees plan to look after the physical and moral education of the children as well as the mental, and it is their desire to make the school the social centre for the whole district, which consists of over fifty-five sections of land. Manual training will be carried on in all rooms. A large shed has been erected on the grounds for the horses and vans used.

"The school building is a four-roomed frame structure with ample halls, library, janitor's room, large attic and full basement. The latter is used as a playroom, and the attic is to be fitted up for manual training. A fully equipped chemical and physical laboratory has been already installed.

"One class room is fitted out as an assembly hall, where church and entertainments are held. The work of the school at present includes the eight grades of the elementary school programme and that for second and third class teachers' certificates. The staff consists of a male principal and one female assistant. The present enrolment is 80, most of whom, on account of this being a purely rural consolidation are brought in by the van system of transportation. These vans were purchased at a cost of $650 in the summer, and in the winter runners were purchased for them at a cost of $108. They all have routes of over six miles in length and convey from 16 to 20 pupils each. Not one trip was missed during 1912. During the cold weather, foot warmers and robes were provided, and the vans being covered in, the children never suffered from cold or exposure. There has been no trouble in securing competent drivers, and the vans are giving excellent satisfaction, running regularly and punctually each day. For children who are off the van routes more than a reasonable distance, special compensation is made according to the statute for them to meet the van. There is also a small route given to a contractor who furnishes his own conveyance and brings a small number of pupils each day.

"While the transportation of the children and the equipment for a large school have raised the taxes somewhat higher than under the old system, yet there are none, I believe, who regret that consolidation has been adopted in this locality.

"As civilisation advances, we find the demands of the times changing. This country, relying chiefly on its agricultural industries, demands that country children shall have equal chances with the city children in the way of education. This being the case, we realise that the only direct way to give country children the higher education they require is to establish rural school centres, provide modern up-to-date equipment, and the advantages which the children will derive will offset any extra cost in the way of taxation which may arise under the present consolidated system."

SPERLING.

"The Consolidated School District of Sperling is comprised of the old Waddell district, in which is the village of Sperling, and parts of the districts of Brigden, Garnett and Tremont, as well as some territory not previously included in any district, in all some forty-six sections of land. It began operations in September, 1910. The cost of the building, land and furnishings was $14,537.49. The building is of brick veneer with stone foundation and is 43 feet by 51 feet, with large and well ventilated recreation basement with cement floor, and divided with a door connecting boys' and girls' playground. The building is two storeys high and has four class rooms, a science laboratory room and a library press in every room. Each room is capable of seating over sixty pupils at individual desks. Three rooms are at present occupied, the fourth being used as a physical drill hall.

"A steam and hot-air heating and ventilating system is used, and after fully three years' experience it is pronounced entirely satisfactory. Indoor chemical closets are used in winter and the usual outdoor closets in summer. The former are all that is claimed for them by the makers.

"To cover cost of building, etc., debentures were issued for $10,000 at 5½ per cent., payable in twenty years, $500 per year for the first ten years and $500 per year for the second ten years.

"The district owns three vans on wheels and runners, including robes, etc., which cost in all $585.

"In addition to these vans, a private democrat is engaged, conveying three pupils. Contracts are let for one year and the contractors are held responsible for all reasonable repairs during contract. Through the careful selection of drivers, there has arisen no dissatisfaction, and the comfort of all the pupils having been amply provided for, the parents of the children are highly gratified with the van service. One month's salary of each driver is withheld by the district to guarantee the faithful performance of the work.

"The length of routes and cost are: A—five and a quarter miles, $3; B—three miles, $2.25; C—six and three-quarter miles, $3.90; private democrat, three miles, $1.75. One trip missed during the year.

"The grounds are five acres in size and cost $500.

"The staff consists of a principal and two female assistants.

"The enrolment of the school this year was ninety-four, and the average attendance 71 per cent. of the enrolment.

"The general feeling toward consolidation is growing stronger and stronger as time goes on. It is needless to say that there is still a remnant making their voice heard in opposition to the scheme. The chief objectors to consolidation at its inception here stated their grounds as being not against the probable increase in taxation that would ensue on its adoption, but that the educational results would fail to make good compared with the increased expenditure. In times past, under the old regime, students anxious to take up high school work had perforce to go from home for two or three years and procure their educational advantages at a cost and under circumstances that were naturally only open to a privileged few who possessed the means, debarring, as is easily seen, the poor man's children from a proper and progressive education.

"Situated, as the school district is, in three municipalities, there is consequently a disparity in the assessment, and on this account there has arisen some little dissatisfaction. One of the districts possesses a drainage system with a flat rate, and another district benefits by the town of Sperling being included, the assessment of the town aiding in the general reduction of the rate in that particular municipality. Inequalities like these, however, are quite apart from the merits or demerits of consolidation.

"Our experience with consolidation proves that in such districts a better class of teachers can be procured and retained. Older boys and girls come to a large school and feel satisfied who would not attend a small school. Transportation safeguards the health in many ways. The moral tone is better, the school being under the close supervision of trustworthy and experienced persons. Better classification, equipment, supervision and teaching produce conditions more likely to ensure success and prove the cheapest course in the end.

"Examination of the tables of attendance show that the children who are conveyed attend as regularly as children in the same district who live so near the school that conveyance is unnecessary, and that the percentage of attendance of all children in such districts is much higher than that of the one-room rural school."

The testimony of inspectors and officers of the Department of Education who are in touch with the movement is to the effect that the range of work is widened, the quality of instruction improved and the interest of the community intensified. It is clear, however, that the cost of education under this plan of organisation is greater than under the plan it has replaced; and in comparing the plans the undoubted increase in efficiency attending the former must be weighed against the increase in cost. No community should be persuaded into adopting the scheme of consolidation without full information as to the responsibilities to be incurred, as well as to the advantages to be secured.

A measure of this kind, involving additional expenditure, will take time and discussion to commend itself to the communities concerned. There are undoubtedly many localities where by reason of physical conditions it will be found impracticable. For these reasons, however hopeful the outlook for the adoption of consolidation may be, progress and reform for a great part of the province must be sought in increased efficiency in the teacher and in a wise adjustment of the course of study to the conditions of the one-room rural school, and a determined and sustained effort to make the school surroundings more attractive to children and teachers. In the meantime, where it is thought wise to enter the scheme of consolidation, it should be done under the direction and advice of the Department of Education. The department should be prepared to give such guidance to school districts that any partial adoption of the plan by independent localities would not interfere with the future adoption of a comprehensive scheme should experience show this method of organisation to be suited to large areas of the province. Unless a wise forethought is exercised at the outset, action may be taken that will permanently exclude many districts from participating in the benefits of a measure that seems to have in it great possibilities for educational betterment. It should be pointed out here that the plan of "large districts" as provided for in section 12 subsection (3) and section 167 (*a*) of The School Act, has the same aims and possibilities as consolidation, and in so far as this is adopted in districts yet to be formed, it will secure all the advantages of consolidation without any of the vexatious readjustments that are required after the formation of the smaller districts.

RECOMMENDATIONS.

After a careful consideration of the many points involved in the matter of the consolidation of schools your commission is strongly of the opinion:

1. That at the present stage of development of the province a careful study of conditions bearing on consolidation throughout the province should be made with a view to drafting a comprehensive scheme into which individual consolidation might be made to fit;

2. That steps should be taken to inform boards of trustees throughout the province as to the progress and results of consolidation elsewhere, and particularly in other provinces and states where conditions are similar to those in Saskatchewan;

3. That special assistance should be given to a number of rural schools to enable them to consolidate under the direction of the Department of Education so as to provide an opportunity for testing directly the suita-

bility of this plan of organisation to the conditions and needs of Saskatchewan;

4. That districts wishing to consolidate should receive such guidance and assistance from the Department of Education as conditions seem to warrant.

5. That wherever a consolidated school may be established the conditions of such establishment require:

(*a*) That the school grounds be of a sufficient area to admit of proper instruction in school gardening and elementary agriculture; and

(*b*) That provision be made therein for proper instruction in manual training and household science.

6. That in any consolidated school established as above, the Department of Education may in its discretion direct that such instruction be given in the subjects prescribed for secondary schools as the circumstances of the community may seem to require.

Persons requiring fuller information than can be given within the compass of this report will find a very complete account of the operation of consolidation in a bulletin of the United States Department of Agriculture, written by Mr. George W. Knorr, field agent of that department. It is entitled "Consolidated Rural Schools and Organisation of a County System," Bulletin 232, Office of Experiment Station, Department of Agriculture, Washington. Other books and publications dealing with the matter of consolidation are:

A Study of Fifteen Consolidated Rural Schools, their Organisation, Cost, Efficiency and Varied Interests.—By George W. Knorr. Published by the Southern Education Board, Washington, D.C., 1911.

Our Country Schools.—By Superintendent O. J. Kern, Rockford, Ill. See pp. 240–251. This book is on the township library list, and is found in many of our school libraries.

The American Rural School.—By Prof. H. W. Foght. "Consolidation" is discussed in the last chapter, pp. 302–333. This book is on the township library list.

Country Life and the Country School.—By Mabel Carney. See pp. 149–187. Published by Row, Peterson & Co., Chicago.

Farmers' Institute Bulletin, 1903.—Pages 95–108. Address given by Superintendent C. P. Cary at Farmers' Institute at Marshfield. A copy of this bulletin is usually found in the district school library.

Report of the Committee of Twelve on Rural Schools, 1897.—Pages 46–55, 137, 138.

Proceedings of National Educational Association for the following years: 1901, pp. 804–811; 1902, pp. 224–231 and 793–798; 1903, pp. 916–936; 1904, pp. 313–316; 1906, pp. 337, 338; 1907, pp. 277–279; 1908, pp. 420–431 and 1054–1060; 1910, pp. 276, 277.

The following states have published bulletins or reports dealing with the subject of consolidation:

COLORADO.—*The Consolidation of Rural Schools.* Bulletin issued by the State Teachers' College, Greeley, Colorado. 1911.

CONNECTICUT.—Report of the Board of Education 1910–1911. Pages 170, 171, 272–275. Hartford, Connecticut.

ILLINOIS.—*Consolidation of Country Schools,* 2nd edition, 1904. Bulletin issued by the University of Illinois, Urbana, Illinois.

Annual reports for Winnebago County Schools, Superintendent O. J. Kern, Rockford, Illinois.

INDIANA.—Report of the Superintendent of Public Instruction, 1908. Pages 335–414.

IOWA.—*Rural Schools.* 1905. Issued by the Superintendent of Public Instruction, Des Moines, Iowa.

KANSAS.—*Consolidation of Rural Schools.* 1908. Issued by the Superintendent of Public Instruction, Topeka, Kansas.

MASSACHUSETTS.—*Consolidation of Schools and the Conveyance of Children.* Bulletin prepared by G. T. Fletcher, agent of the Massachusetts Board of Education.

NORTH CAROLINA.—*Consolidation of Schools and Public Transportation of Pupils, 1911.* Issued by Superintendent of Public Instruction, Raleigh, North Carolina.

OHIO.—*Centralised Schools in Ohio.* By A. B. Graham. An extension bulletin published by the Agricultural College, Columbus, Ohio. February, 1907.

OKLAHOMA.—*Rural School Consolidation.* 1911. Issued by the State Board of Education, Oklahoma City.

SOUTH DAKOTA.—*Consolidation of Schools in South Dakota.* 1908. Issued by the Department of Public Instruction, Pierre, South Dakota.

TENNESSEE.—*Consolidation of Schools and Transportation of Pupils.* 1912. Issued by the Department of Education, Nashville, Tennessee.

TEXAS—*Consolidation of Rural Schools, School Buildings and Plans, and Local Taxation.* 1912. Bulletin issued by the State Department of Education, Austin, Texas.

WASHINGTON.—*Consolidation of Rural Schools and Transportation of Pupils.* 1911. Bulletin issued by Superintendent of Public Instruction, Olympia, Washington.

WEST VIRGINIA.—*Some Objections to Consolidation Answered.* 1911. Prepared by L. J. Hanifan, school commissioner, and published by the Department of Public Instruction, Charleston, West Virginia.

WISCONSIN.—Annual report and school directory for Grant county. Issued by Superintendent J. C. Brockert, Lancaster, Wisconsin.

Wisconsin County Life Conference. February, 1912. Pages 44–68. Address delivered by Superintendent J. C. Brockert, Lancaster. Bulletin issued by the University of Wisconsin.

PHYSICAL EDUCATION

From the evidence submitted to your commission, it is clear that public opinion is strongly in favour of systematic physical training as a part of the regular school work. It is pointed out that the school has control of the child during the period of growth; that the ordinary work of the class room calls for little physical activity; that the positions taken by children during study are likely to be unhygienic and have a tendency to prevent symmetrical development; that the air supply is not always sufficient; and that the conditions of school life are favourable for the communication of contagious diseases. It is argued that, as physical fitness is a condition of effective work of any kind, a school system undertaking to educate for efficiency must give a prominent place to physical education.

To do this effectively the first requirement is hygienic school conditions and surroundings. The class room should be sufficiently large to allow not less than 15 square feet of floor space and not less than 150 cubic feet of air space for each pupil. The ventilation system should be sufficient to introduce into the class room not less than 30 cubic feet of fresh air per minute for each pupil, and the heating plant should make it possible to maintain the atmosphere at a temperature of 68 degrees Fahrenheit. The window area should be equal to at least one-sixth of the floor space, and the class room should be so arranged that the light should come from the left of the pupils. The shape and arrangement of the room should be such that no pupil should be farther than about twenty-two to twenty-four feet from the window through which the light is supplied. Most important in its bearing on the health of the pupils is the seating of the class room. All desks should be so constructed that heights and distances may be adjusted to suit the size of the several children occupying them. These are essential conditions to be insisted on in the erection and equipment of all school buildings.

It is scarcely necessary to say that commodious grounds are also indispensable. Free play in the open air is one of the best physical and mental stimulants, and under wise direction the opportunity the play ground offers for moral training is unsurpassed. From every point of view a large playground is an essential feature of a school.

But even with suitable surroundings there is still much positive work for the school to do. In the first place there should be a well graded course of physical exercises. Each exercise should have some definite purpose in view, whether for correction or development, and be administered intelligently by teachers who have been trained to understand and appreciate the importance of this department of their work. Such a course already exists and is within the reach of all. The syllabus issued by the English Department of Education and adopted by the Strathcona Trust is now authorised for use in the schools. It is necessary only to insist that this work as already outlined be regularly carried out. For this purpose teachers must be trained, and inspectors of schools must regard this work as one of the important factors in determining the efficiency of the school.

The duty of the school, however, does not end with providing and administering a course of physical exercises. Each pupil upon leaving school should carry with him a clear knowledge of the common rules of correct living, and a profound impression of the importance of maintaining his health at its highest efficiency. He should also carry with him definite notions of community hygiene and a sense of his obligations to society in this respect. To secure these ends, careful and systematic instruction in the elements of hygiene should be part of the regular work of the class room.

But the advice of the medical inspector is necessary for the wise application of physical exercises to individual cases and for intelligent direction of hygienic instruction. Vigilant medical inspection is the safeguard against unhealthful school conditions, the introduction and spread of communicable diseases, and the insidious growth of physical defects which, if not remedied, impede the child's progress in study; and, because they prevent his proper development, endanger his future usefulness.

A wisely conceived system of medical inspection of schools would undoubtedly do much to improve the physical vigor of the coming generation and public opinion in many communities in the province is prepared for its introduction. But leadership for such a movement is very necessary both in urban and rural districts.

As medical inspection of schools is comparatively of recent origin even in urban schools, it is thought well to deal with it somewhat fully. Medical inspection of schools has in the older communities at least passed the experimental stage. In Canada, the United States, Great Britain and other European countries, very complete systems of organisation and administration have been worked out. In England and Wales 1,400,000 children are inspected annually.

In many cities of the United States the system of inspection is very complete. The duties of medical inspectors include the following:

A.—Sanitary inspection of buildings and equipment—

Overcrowding,
Heating and ventilation,
Illumination,
Cleanliness,
Drinking water,
Toilets,
Coat rooms,
Cellars,
Playgrounds.

B.—Physical examination of pupils with a special record of physical and mental defects—

Defects of vision, *e.g.*, myopia, astigmatism.
Defects in hearing, *e.g.*, inspection auditory canal.
Deformities, *e.g.*, spinal curvature, flat foot.
Ophthalmic diseases, *e.g.*, conjunctivis, trachoma.
Throat and nose diseases, *e.g.*, diphtheria, tonsolitis, adenoids.
Diseases of the teeth, *e.g.*, decay.
Cutaneous diseases, *e.g.*, eruptions, eczema.
Diseases of the thorax, *e.g.*, asthma, bronchitis, phthisis.
Diseases of malnutrition, *e.g.*, scurvy, rickets.
Parasitic diseases of the scalp and elsewhere.
Nervous disorders.
Mental or moral weakness.

C.—Special report on contagious diseases, *e.g.*, scarlet fever, measles, diphtheria, whooping cough, ringworm, pediculosis.

In some cities very careful measurements are made of the pupils, and these are preserved for reference. In this regard, however, Dr. Walter S. Cornell in "Health and Medical Inspection of School Children," says: "The things which should *not* be included in a medical examination are well worth enumerating, since thousands of dollars on salaries have been wasted on useless effort. They may be classed under three heads: (*a*) work which is scientific but of no practical value (*e.g.*, measuring and weighing children); (*b*) work which is scientific but impractical of accomplishment (*e.g.*, tuberculosis test, examination of heart); (*c*) work which is neither scientific nor practical (*e.g.*, inquiry into nationality of pupils, note of complexion)."

Full provision is made for supplementing the inspection by reports to parents and by visitation of nurses to the homes, while needed information is freely supplied to the parents, through bulletins and otherwise, as to the best methods of combatting infectious diseases and dealing with pupils suffering from common ailments.

In Canadian cities medical inspection is well introduced. Four of the largest cities of Saskatchewan are already following the lines laid down by the older communities, and are doing particularly good work. In order to show the methods of tabulating, reporting and following up cases a few of the blank forms in common use are herewith given.

FORM A.

Department of Medical Inspection, Public Schools.

.... School,

....191...

............is affected with............. This disease is liable to be transmitted to other children. The child should receive prompt treatment by your physician or at a dispensary, or as outlined in the enclosed circular. Otherwise it may be necessary to exclude the child from school.

.............M.D.

FORM B.

Department of Medical Inspection, Public Schools.

....School, ...191..., Mrs...........................

My Dear Madam,—

This is to notify you that your child... ....in attendance at ....school is in need of medical attention for................ For the best interests of the child, you are advised to consult a physician, hospital or dispensary, without delay. Please have the attached card signed by the physician and returned to school by the child.

....M.D.

N.B.—This notice does not exclude the child from school.

The need of medical inspection is clearly evident from reading over the statistics furnished by any city where the work is carefully done. The following extract from the report of the Board of Education for England and Wales is suggestive as indicating conditions existing elsewhere:

> "The pressing need of medical inspection is shown by the mere summary of conditions disclosed in the last year. Of the children attending the schools, 10 per cent. had defective eyesight, 4 per cent. defective hearing, 7 per cent. adenoids or enlarged tonsils, 40 per cent. decayed teeth, 30 per cent. were suffering from utter neglect of cleanliness, 1 per cent. were tubercular and nearly 2 per cent. had heart disease. Seventy-two authorities were giving free spectacles to children needing them; twenty-two authorities made provision for treating children in hospitals, and forty-eight authorities had established free clinics."—*Commissioner of Education Report, 1912.*

In New York the estimate is made that the eyesight of 29.5 per cent. of children is defective. In Philadelphia the estimate is 28 per cent. The London reports indicate that 26 per cent. of the pupils have not more than two-thirds vision. Only about three-sevenths of the children who need glasses are provided with them. This is but one illustration of the need of a system of supervision that will protect children from the evils that follow from the neglect or ignorance of parents. It is found that in cities where medical inspection is rigidly carried out, from 60 to 80 per cent. of the children have some physical defect. In the majority of cases these defects would be unknown to the parents but for the action of the medical inspectors.

The good results of systematic medical inspection are very evident in all the cities and towns where the system has been adopted. All reports go to prove that physical conditions have improved generally; that there are fewer cases of dullness and inattention; that communicable disease is not so common; and that individual pupils who have been victims of neglect or ill-treatment have been given a new footing in life because of the intervention of the health inspector.

An important result of the introduction of systematic medical inspection of urban schools has been the opening of classes for defectives. This is well illustrated in London, England, where provision is made for special teaching to many classes of pupils. The need of specialisation is well set forth by Dr. Shuttleworth in "The Report of the Departmental Committee on Defective and Epileptic Children," Vol. 1, issued by the English Education Department and published by Eyre and Spottiswoode, East Harding Street, London, England. This report is full of instructive matter and will well pay perusal.

A good illustration of what may be done with defectives is given in the following statement from Dr. Linsley Williams, of New York:

> "It has been discovered that in the special schools for backward children, the proportion of defects runs up to over 90 per cent., and it was also found that among the truants there existed a still larger proportion of physical defects. The number of children so examined has not been very large, but of over a hundred truants examined some 95 per cent. revealed such physical defects as interfered with the progress of the child. In School No. 110, a special school for backward children, eighty-one children were operated on for hypertrophied tonsils and adenoids. * * *

"A report of seventy-seven of those backward children obtained by the Department of Health reveals the following significant facts:

"All of the seventy-seven have improved physically and have been promoted.

"All but four have done more in school in the past six months than in the previous two years.

"One child did three years' work during the past year; that is, a child of eleven, backward, was promoted rapidly and performed all the work that is expected of a child 6, 7 and 8 years of age.

"Four of these seventy-seven children did not advance.

"It may very readily be assumed that this rapid promotion was due almost entirely to the improvement in their physical condition which resulted from the removal of their hypertrophied tonsils and postnasal growths, which have so seriously interfered with their breathing, and consequently with their physical and mental development. * * * "

The following extracts are taken from Educational Pamphlet No. 8 of the Department of Education for Ontario, entitled "Medical School Inspection":

ONTARIO.

The results of these first medical inspections in the rural schools of Ontario show that a comparatively large number of the pupils in our rural schools suffer from defects which must be remedied if our provincial system of education is to produce the best possible results. The vision and hearing of many pupils are seriously impaired; enlargement of the tonsils and the presence of adenoid growths prevent proper breathing and proper physical development; teeth are dirty and decayed, because they have not been properly cared for; cleanliness and personal hygiene are too often neglected, the children are not taught how to keep themselves and their clothing clean; and there are many other diseased and defective conditions which demand attention.

The organisation and administration of these preliminary inspections show that difficulties vanish when the interest and good will of the community is aroused. The boards of trustees in every instance permitted the inspection, and gave all needed facilities for the work; the teachers assisted greatly in its success; and the co-operation of the medical profession, especially of the district medical officers of health and the local officers of health, made the work not only possible, but eminently practical and useful. Finally, the services of an experienced school nurse, and proper consultations with the parents, enabled those in charge of the work to attain the real aim of medical inspection, inasmuch as some of the children to whom treatment was most necessary, obtained it at once and were greatly benefited.

The medical inspection of schools has a good effect upon public school buildings and their surroundings. These are better cared for and kept in a much cleaner condition; and the ventilation is better.

This preliminary work on medical inspection in some of the rural schools of the province is a demonstration of the benefits which would be secured by establishing a general system of medical inspection of schools as part of the system of education in the province. It would, no doubt, be necessary that great care should be exercised in organising and administering such a system, but the advantages would be correspondingly great. The work should be thorough, the records should be simple, and the aim of improving the child's health so that he may be a better scholar and a better citizen, must be steadily kept in mind in everything that is done. Records are important, but, when a defect is recorded, the matter must be kept in hand till the child's health is made as good as it can be made, and every advantage should also be taken of physical training with this end in view.

In many cases the parents know of troubles from which the children suffer, but do not realise the importance of treatment, thinking it "not worth while," or thinking that nothing need be done for their children, because other children have the same troubles.

The usefulness and success of any system of medical school inspection depends upon securing physicians and nurses of high personal and professional qualifications and character to do the work. Organisation and administration, as already pointed out, are very important in saving time, avoiding friction and concentrating effort. But without high personal and professional qualifications, character and intelligence, in those appointed to the important offices of medical inspector of schools, and school nurse, no system can succeed. Great consideration must be shown to the parents and to the rights of the family and the family physician. The medical school inspector and the school nurse can do a great deal to protect the community from epidemics of contagious diseases.

The need for medical school inspection has in theory been long recognised by all those who understand its purpose, and the physical condition of many children. The facts gathered in these Ontario demonstrations are reported in the belief that medical school inspection has passed beyond the theory stage and has become a practical necessity for healthy home life, for enabling children to profit by school life, for developing both in rural and urban districts a people strong enough to make the limitless resources of the Province subservient to their ends and to do their part in safeguarding the nation.

GREAT BRITAIN.

A Royal Commission was appointed to pursue investigations throughout England and Scotland. The findings of the Commission showed beyond doubt that not only men and women, but great numbers of school children were suffering from defects of many kinds, and from lack of suitable food and clothing. The report brought the physical efficiency of school children within the sphere of practical politics. The British Government accepted the responsibility involved and by comprehensive legislation and substantial grants made it possible to begin practical work at once.

The Education Act of 1906 made provision for the supplying of meals to children of school age. Unfortunately, attention was centred on the parent, and while authorities were finding out if the parent were deserving the child was still neglected. A duplicate Act framed for Scotland in 1908 gave the school boards power to supply the needs of any child first and to secure information about him later. Moreover, provision by the board for a needy child was made compulsory.

Already through the influence of Miss Margaret McMillan, for ten years a member of the Bradford School Board, medical school inspection had become part of the Bradford school system, and had gained some foothold in London. This paved the way for special legislation for the whole country.

The Education Act of 1907 made it the duty of education authorities to provide for the medical inspection of children on admission to a public elementary school, and on such other occasions as the school board might direct. It also gave power to make arrangements for attending in other ways to the health and physical condition of school children.

SCOTLAND.

Scotland, with its farming country surrounding the cities, and its remote districts, almost inaccessible, presents difficulties very similar to those in Ontario. Medical school inspection has gone rapidly forward under government initiative. The following extracts show the purpose and point of view of the Scotch Department of Education:

"The first (purpose) is that school boards should satisfy themselves that every pupil under their charge is fit to profit by the education offered. Where pupils are not physically sound, it may be necessary to modify the nature of their education and the environment in which they are taught to suit their individual capacities.

"The second purpose of medical inspection is to secure that the health of the pupils shall be maintained at the proper standard. This involves a carefully organised scheme of medical supervision, and 'following up' to see that the necessary treatment is obtained.

"But a few years of medical inspection have revealed the presence of such an overwhelming amount of disease and malnutrition among school children that existing facilities for the treatment of those conditions have proved themselves inadequate to deal with the number of cases requiring treatment. From the beginning it was realised that medical inspection and supervision were but initial steps to the greater task of grappling with the problem of improving both the personal health and the environment of the nation's children. Medical inspection has already forced upon our attention the need for an extended application of medical science to child life generally. It has already raised a whole series of problems, both immediate and remote, that demand attention.

"Perhaps the first and most urgent problem to be dealt with is the treatment of present suffering and disability. Schemes for medical treatment are everywhere already grafting themselves into the original scheme of medical inspection. This addition to the organisation of the school medical service is giving rise to increased complexity of administration. But the intimate relation of schemes for treatment with schemes for inspection is of the utmost importance from every point of view. It gives additional interest, if such were needed, to the routine work of medical inspection. It brings the medical inspector into closer touch with the child. He now not only issues a notice to parents directing their attention to need for treatment, but may himself become the medium through which treatment may be obtained. The advantage of this arrangement is of much greater significance than in merely simplifying the 'following up' of cases, and in making treatment more readily accessible to the child. It brings the medical officer into clear personal relation with the child, and serves to shift his point of interest from the disease to the child himself.

This is a gain of the first importance, for the interest of medical inspection and supervision, its vitality, and its future development, as an important factor in social growth, depend not so much upon the love of an abstract study of disease and physiological growth as upon the inspiration generated by contact with, and love, for the living child."

For the purpose of simplifying the organisation of medical school inspection and employing whole time medical officials for the district, school boards have been brought into relation with the public health service through county committees. In all but six counties the medical officer of health either acts as supervising medical officer, and secures the necessary assistance for the work of medical school inspection, or performs the double duty of medical officer of health and school medical officer. In every case where a supervising officer exists he is also the medical health officer. In this way more thorough, effective work has been carried on, and valuable time of highly paid officials has been saved.

Some school boards in the cities have worked out a system of their own. These systems are recognised by the Scotch Education Department only in those cases "where the population of the area is sufficient to justify the employment of at least one whole time medical officer."

Medical school inspection is now carried on in every town and county in Scotland In half a dozen centres, counties have united for better management of the work. Free treatment is being given to an increasing number of necessitous children in the cities and parishes, and is being extended gradually into the country.

In accordance with the purpose of securing a proper standard of health for pupils, the medical health officers are devoting their time partly to advancing the work of physical training for pupils and to consulting with instructors as to exercises best suited to correct defects. Health talks given to parents and children are made the means of a better understanding between medical officers and parents. The tactful and sympathetic personal connections thus made possible are gaining results obtained in no other way. The home is being regarded as "the point at which health must be ultimately controlled."

The school nurse in Scotland is an essential part of both the home and the school side of the educational as well as the routine work of medical inspection, and, "where school nurses are employed, their services are becoming more and more highly prized."

School children are for the most part regularly examined on entrance, when about to leave school, and usually once or twice in the interval. Since the attendance of the parents at the regular routine inspection may be regarded as an index of the interest taken, it is worthy of notice that, in general, the percentage of this attendance is high—in Glasgow, for instance, over 72 per cent.

The reports of inspection in the country show a large number of children suffering from bad nutrition, which the medical school officers attribute to two causes—first, the substituting of tea and jam for the once universal nutritious dish of oatmeal porridge and milk; second, the missing of the hot mid-day meal. In many districts country children live at considerable distances from the school, and cannot go home at noon. Already efforts are being made by school boards, teachers and others to provide hot meals at school. Farmers have taken the matter up, and have contributed home-grown produce to a local fund for providing suitable, nourishing, hot dishes at school during the noon recess.

Dr. Gordon A. Lang, medical school officer for the mainland district of Inverness-shire, in an address to the Second Guildhall School Conference on diet, etc., held in London, in which he explained to the conference the system of feeding school children in his district, said that: "in practically every country school in the district, a hot meal of some sort is given. Some give soup, meat and bread; others, soup and bread; others, soup alone; and many more give cocoa and milk, with or without bread. The system is a voluntary one, and the money to meet the cost was raised by concerts, entertainments, and subscriptions." He also said that "the prevalent feeling on the subject of diet for school children was that the food should be simple and nutritious; that part of it should be sufficiently solid to require careful mastication; and that the teeth should be put and kept in a fit condition to perform the work required of them."

EDUCATION ACT OF 1913: SCHOOL CLINICS.

The medical examination of school children in Scotland soon showed that while a great many children were taken to the family physicians for needed attention, there were many school children whose parents either were not able, or neglected to have anything done to correct the defects reported by the medical officer. That school boards might have full power to deal with these children the Education Act of 1913 (Scotland) defined the duties of school boards in regard to medical treatment of children, as follows:

"Where as a result of medical inspection, or otherwise, it is brought to the notice of a school board that a child attending a school within their district is in need of medical (including surgical and dental) treatment, the board shall have, and shall be deemed since the commencement of The Education Act 1908, to have had, the same powers and duties with reference to the provision of medical (including surgical and dental) treatment for the child as they have with reference to the provision of sufficient and proper food, or clothing, or necessary personal attention, under and in virtue of section 6 of the said Act. In carrying out the provisions of this Act or of section 6 of The Education Act 1908, a school board shall have power to act in combination with one or more school boards, or with the Secondary Education Committee for the district."

Already the Scotch Education Department had sent out a notification of a grant of £7,500 to be divided among those school boards which gave medical treatment to necessitous school children. The arrangement for 1914 was that the department should give a grant for the treatment of necessitous children equal to the approved expenditure of the school boards. Detailed estimates of the proposed expenditure were to be sent in by January, 1914. The following extract shows the effort made by the department to encourage school boards to take advantage of the grant offered:

"In all cases where a school board finds it impracticable to deal with the problem of medical treatment effectively and economically, by independent action, it is strongly recommended that the board should communicate without delay with the Secondary Education Committee who may be able to devise a comprehensive scheme, covering the whole range of treatment proposed to be given within their district."—*School Education Department, Circular 455.*

ENGLAND.

MEDICAL SCHOOL INSPECTION IN LONDON.

In England, also, medical school inspection has gone rapidly forward. In 1904, the medical school inspection staff of the London County Council consisted of one officer, Dr. James Kerr, formerly of Bradford, one assistant medical officer, one half time and two quarter time assistants, besides oculists and nurses.

The detailed inspection required by the Education (ad. P.) Act of 1907 gave to the London County Council the problem of working out a system of inspection for the school children in a population of almost eight millions. This detailed inspection was begun in 1909. Much still remains to be done, but the machinery set in motion during the last five years is a tribute to the administrative ability controlling it.

At the present time all school children are given a general examination—weight, height, lungs, spine, eye, ear, nose, throat—at least three times in their school life: once on entrance, once at eight or nine years of age, and again before leaving age, that is, between twelve and fourteen years. The school nurse sees each child once in three months, and any child found requiring attention is sent by her, or the teacher, or the doctor, for a special examination. To the regular examinations, parents are invited to come with their children, that they may understand what is required and furnish any necessary information.

In one very poor district about twenty-five mothers came with their children for the morning inspection by the school doctor. Gathered for one purpose, they were yet so different. One sweet-faced woman held a baby in her tired arms. She looked as though the responsibilities of home-keeping were almost too much for her, and she was glad enough to have some one help in the management of the children. A stout mother sat complacently with her boy, unconscious that his neglected teeth and his mouth breathing were already hindering his progress at school, and would count against him later in the work-a-day world. However, the doctor said it was so, and if he could make the child "smarter," she was quite willing. A restless little woman, looking like a butterfly with wings bedraggled, seemed impatient to be gone. It is surprising that busy mothers, some stretching the family purse to keep a home cosy; some working out by the day to make ends meet, should so willingly set everything aside to go, when requested, to the school inspection. As the doctor remarked, "We do not realise how much it all costs these parents." Sometimes with few conveniences, the mother must take several days to nurse a sick child after an operation. "They are very brave," said the nurse; "how they manage it, I do not know."

The mothers on this particular morning gave an appreciative hearing to the doctor's advice on such matters as the best way to keep a bedroom fresh, the amount of sleep a child should have, how to prevent toothache, the amount of clothing required by a healthy child; some children had twelve thicknesses on, and some only three.

The children waiting for their turn were surprisingly good. "It is extraordinary how these babies put up with examinations," remarked the doctor. One alert, dimpled girl thought it all a great piece of fun, while the boy who followed her cried before he came near, and would not be pacified, even when the doctor inconsistently remarked: "We'll think you're a girl if you cry like that."

The extension of the scheme of medical inspection over the large population under the London County Council made it necessary to extend also the system of treatment for children whose parents were not able to pay the family physician for the attendance recommended by the school doctor. The accessible hospitals were overcrowded, and the Council recognised that further facilities were needed to cope with the increase of attendance. Arrangements were, therefore, made for the treatment of certain defects at the medical treatment centres.

GERMANY.

Germany during recent years has devoted much time to the study of the health of school children. Medical school inspection is now being carried on throughout the larger towns and cities, but it has not yet been extended to smaller centres or to the country. At the beginning of the year 1914, there were in all Germany 1,759 school doctors employed. The administration of the work is sometimes under the education authorities, sometimes under the health authorities, or, as in Munich and Nürnberg, the medical school inspection officials are answerable partly to the district health officials and partly to the education officials.

By means of polyclinics, Germany has used her hospital system to provide for the treatment of children. While the value of these polyclinics can scarcely be doubted, there seems reason to believe that something better could be supplied for the majority of school children.

Many cities employ a chief medical officer who gives his whole time to the work, and other medical officers who give but part time. The larger places require that at least eye and ear specialists be included among the school doctors employed. The extent of examination of children, also, varies in different centres. Some require an examination only on entering school, others on entering and leaving school; still others have weekly consultation hours reserved for school children, besides the regular examination. This last arrangement has met with most success in Halle, where four consultation hours are reserved weekly.

In Germany, much of the regular duty of a school nurse has been done by the Red Cross or other nurses. School nurses have just recently been added to the staff of medical school inspection in Breslau, Cassel, Essen, Hanover, and Charlottenburg.

Since, in Germany, each centre has its own independent system of inspection, each defrays its own expenses. Charlottenburg, which offers the advantages of inspection and treatment not only to school children, but to every member of the family, has many specialists employed in the different departments. That the Charlottenburg lung department alone costs 150,000 marks ($37,500) annually shows the city's willingness to help in building up a healthy community. Constant effort is made to have all share as much responsibility for themselves as they are able. Special officers are, therefore, employed to keep record of incomes and collect according to the ability to pay. The lack of any uniform system has thus far made it impossible for school doctors to furnish reliable comparative statistics of their work.

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The following are extracts from letters from the provincial inspectors of schools for Saskatchewan respecting the desirability of medical inspection of schools.

"I consider the matter of vital importance, as I have noticed that the number of children who are suffering from minor ailments is gradually increasing, and, unfortunately, many of the pupils are not receiving the medical attention which their case demands in order that the health of the child may not be permanently impaired and that the progress may be more satisfactory."—W. T. HAWKINGS.

"I think a system should be devised whereby teachers, inspectors, etc., should report to the central government cases of pupils suffering under marked physical disabilities such as adenoids, diseases of ear, eye, etc. Then if the central government could undertake to render relief free, if necessary, in such cases a great boon would be conferred. In my own district I have come across about twenty cases that would fall in this class. Multiplying by the number of inspectors in the province, I estimate between 400 and 500 children in all who should receive attention; I believe the greater number of these might be greatly helped in this way. Anything of this sort should be in charge of tactful persons, otherwise serious friction would arise."—J. O'BRIEN.

"As matters stand some municipalities have medical officers to whom the teachers may refer in case they suspect disease. In many cases, however, the teachers do not know who this officer is. In other municipalities no such officers are engaged, and in case of an outbreak of disease there is no one to specifically look after same. * * * I am very strongly of the opinion that there should be some person (doctor) to whom each teacher should report regularly, and the inspector should be able to summon such a person if he discovered serious cases."—J. T. M. ANDERSON.

"My experience satisfies me that something must be done more than is done to protect the children of the rural districts in matters of health * * * Many children suffer from lack of satisfactory care and the exercise of proper treatment by reason of the ignorance of young teachers upon whom little blame can be placed, and by reason of similar ignorance on the part of parents. For a solution I would recommend that the councils of rural municipalities be given authority to appoint a medical health officer with power to visit the schools in the municipality and examine and treat the children. The expense might be shared by the municipality and by the government."—A. KENNEDY.

"I think nearly all cases of retarded or defective children are either noticed by myself or pointed out to me by the teacher. Whenever it seems advisable the case is reported to the Superintendent of Neglected and Dependent Children. There are a few with weak eyesight and others with strabismus. If I am unable to see the parents about it, I nearly always ask the teacher to speak to them and obtain treatment."—J. DUFF.

"I am strongly of the opinion that a medical inspection of pupils could not be otherwise than beneficial. It is highly probable that there are pupils in nearly every school who have disabilities that only a person with medical training would discover. At the same time, I do not know of any cases where a medical inspector was urgently required. I am at a loss to state how best it could be carried out from the financial standpoint." —G. D. RALSTON.

"A medical inspection of rural schools would be very desirable if it could be carried out at reasonable cost. * * * The only plan that seems feasible to me, and it would be expensive, would be to divide the province into medical districts with a salaried physician in charge of each." —W. H. MAGEE.

"I consider that the first steps should be taken in the town districts. A regulation to the effect that in all town schools the children of the school should receive medical inspection at least twice a year would be a good initial step towards medical inspection on a broader basis. On condition that such a regulation were carried into effect, I should judge that some understanding should exist with the medical council of the province relative to fees for inspection of school children. * * * Rather than have any definite medical inspection of the schools in the rural districts, I would recommend that a letter be sent out to all inspectors asking that they give this matter attention on the occasion of their visits and make inquiries from the teacher relative to any cases demanding attention, and that these cases be reported to the Health Department of the Province. * * * I further recommend that the matter of medical inspection be brought to the attention of the normal schools of the province, so that the teachers in training be instructed to co-operate with the inspectors and with the Health Department towards remedying any conditions which may come to their notice in the schools."—W. S. CRAM.

"Regarding medical inspection, I have seen cases where medical inspection would have prevented eye trouble. Sometimes parents are advised of such defects by the teacher, but not thinking the matter urgent, have neglected to attend to the trouble. But I am not prepared at the present time to recommend a general system of inspection for rural schools."—H. A. EVERTS.

RECOMMENDATIONS.

For the promotion of the physical well-being of children in schools, the commission begs to recommend:

1. That the Department of Education issue from time to time for the guidance of trustees of rural and village schools plans of school buildings that comply with hygienic and sanitary requirements of schools;
2. That all plans of buildings for schools be submitted to the Department of Education for its approval;
3. That in the training of teachers provision be made for careful instruction in the principles of school hygiene;
4. That all teachers be trained to recognise the more obvious symptoms of communicable disease to which school children are subject;

5. That it be the duty of the teacher to protect the school by the exclusion of children suspected of communicable disease until satisfied that such children are free from contagion;

6. That all teachers be trained to recognise the defects of sight and hearing that manifest themselves in the school room, and that are liable to be aggravated by school conditions;

7. That teachers be held responsible for the maintenance of hygienic conditions so far as these are under their control and that the inspectors be instructed accordingly;

8. That instruction in individual and community hygiene, including instruction in temperance, constitute a regular part of the school course;

9. That all teachers, as a condition of certification, be required to have a competent knowledge of the authorised system of physical training;

10. That boards of trustees, with the consent of the Department of Education, be authorised to organise medical inspection of the schools under their control, and that the Department of Education secure expert advice as to the best method of organising medical inspection in rural schools.

MORAL EDUCATION.

A report of this kind would be incomplete without a reference to moral education. Industrial and intellectual supremacy can mean but little to a nation unless uprightness and honesty prevail in public and in private life. Although religious instruction is practically debarred from the schools, because of varying beliefs, it should not be inferred that people are irreligious, or that they underestimate in the slightest degree the significance of moral training of children. If religion as dogma does not enter the school room, religion as life is usually present.

Teachers are not agreed as to the best method to be followed in the moral training of children. Some rely upon direct instruction through story, myth, fable, history, biography and moral precepts, and hold that if children know the right and are stirred emotionally during instruction they will wish to do right. In this form of teaching there is always the possibility of emotional evaporation. To arouse emotion that does not sooner or later find an outlet in action is, to say the least, an unsound method of procedure.

A second class of teachers rely upon indirect methods and believe that the best opportunity for moral training is in the regular work of the school. The ideal school is, in fact, a society, and the desire for moral activity and consequently the opportunity for moral growth is as great in the school as in any other situation in life. The direct method of training emphasises the thought that the school is a preparation for life; the indirect method which sees in every activity an opportunity for moral development goes on the assumption that the school is participation in life. Both methods will be found useful in the school room.

Moral training implies that every individual belongs to a social system. It is more important today than ever before that pupils have opportunity for co-operation and group work. There is much less demand upon children outside of school than was formerly the case, and there is greater need for co-operative activity in the active pursuits of after life. "The child must learn in school to serve, to accept responsibility and to produce results socially valuable." And in view of the fact that every child must enter into a civilisation, in which there are among workers countless interrelations calling for mutual sympathy, understanding and forbearance, the school should give such information and develop such social attitude as may tend to make life harmonious and pleasant.

There is one form of responsibility that all must share alike. It is responsibility for honest and capable government. This necessitates not only the possession of moral character, but clear and definite knowledge of civic duties and privileges. It is the opinion of your commission that in Grade V and upwards definite instruction in civics should be systematically given.

In view of the necessity of inculcating the principles of temperance and insuring its practice it is necessary that instruction in this subject be given in the schools. It is claimed that the instruction given for so many years in the United States as "Scientific Temperance Teaching" has been one of the main influences leading to recent reforms in the various states of the Union. Your commissioners are of the opinion that the teaching would be even more effective if the appeals to childhood were made on moral as well as on physical grounds. In other words, temperance teaching should not primarily be a branch of community hygiene but rather of moral instruction.

The agencies through which the foregoing ends may be attained include:

1. The personal influence and example of the teacher.

2. Systematic instruction in manners and morals. The syllabus of the moral instruction league and the text-books prepared to accompany the syllabus are recommended.

3. The study of history and biography. The study and memorising of suitable literature, including portions of the Bible; the study of the ten commandments; the memorising of maxims and rules of behaviour.

4. Constant supervision of the children at work and at play;

5. Systematic instruction in civics, in which both the formal duties and the moral responsibilities of citizens are clearly outlined.

6. Systematic instruction in temperance, the appeals being made on moral as well as physical grounds.

7. Sympathetic co-operation in school and cultivation of good feeling between the school and the community.

TEACHERS' PENSION FUND.

The following sections are taken from the constitution and bylaws governing the Winnipeg school board in the administration of the teachers' retirement fund:

"Section 2. The said fund shall consist of:

(*a*) A permanent fund made up of:
  (1) Gifts and legacies specifically given to said permanent fund and of all sums transferred to said permanent fund from the general fund hereinafter referred to.
  (2) A sum set apart annually by the school board for said permanent fund.

(*b*) A general fund made up of:
  (1) Gifts and legacies made to the teachers' retirement fund, not specifically given to said permanent fund.
  (2) Amounts retained from salaries of teachers, under the provisions of this Act.
  (3) The interest derived from the said permanent fund.

"Section 3. The said fund shall be administered by five trustees, consisting of the chairman of the school board, the chairman of the finance committee and the chairman of the school management committee and two members of the teaching staff of the city of Winnipeg, such teachers to be selected as follows:

"A meeting of the teachers of the public day schools of Winnipeg shall be called by the secretary treasurer of the school board for the third Saturday in May, in the year nineteen hundred and five. At least one week's notice shall be given by the said secretary treasurer, of the hour and place of meeting, such notice to be in writing and to be sent to the principals of the several schools. At said meeting the teachers shall select by ballot, one teacher to serve as one of said trustees until the first annual meeting of teachers for the selection of a trustee, and one teacher to serve until the second of such annual meetings or until their successors are appointed. A majority of all the votes cast shall be necessary for selection. Annually thereafter, at a meeting called by said trustees, on the second Saturday in January, of the hour and place of which like notice shall be given, one teacher shall be selected in like manner to serve as one of said trustees for a term of two years, and the teachers so selected shall be appointed trustees by the said school district, and in case of failure of the teaching staff to select such representatives, the board of school trustees shall select from said teaching staff, a representative or representatives, as the case may be, to serve as such trustee or trustees for the term aforesaid."

"Section 6. All retirement allowances, and all necessary expenses incurred by the trustees in carrying out the provisions of this bylaw, shall be paid out of the general fund on a vote of the said trustees. Any moneys of the general fund that may be left over in any year, after satisfying the claims for retirement allowances for such year, may in the discretion of the trustees be paid over to the permanent fund."

"Section 8. Beginning with monthly payments in May, 1905, and at each alternate monthly payment thereafter, the secretary treasurer shall reserve from the payment then made to each teacher whose annual salary shall be at the rate of not less than twelve hundred dollars ($1,200) the sum of two dollars ($2), and from the payment then made to each teacher whose annual salary shall be at the rate of less than twelve hundred dollars ($1,200) the sum of one dollar ($1), said amounts so reserved to be paid to the credit of the general fund.

"Section 9. The said school district shall contribute to the permanent fund, out of the revenues of the school district, a sum equal to the entire amount reserved for the retirement fund from the salaries of all teachers during the year, and also equal to all other amounts paid into the fund by teachers or retained from retiring allowances, as provided for in section 11 hereof, and the secretary treasurer shall pay such sum so contributed into the permanent fund in December of each year."

"Section 11. No sum shall be paid to any teacher retiring under section 10 hereof until the yearly assessments paid by such teacher to the general fund together with interest on each yearly assessment up to the time of retirement at the rate of 6 per cent. per annum, compounded yearly, shall be equal to the amount of a $5 annuity or a $10 annuity, as the case may be, at the end of thirty years with interest at the rate of 6 per cent. per annum compounded yearly, to wit: $395.29 or $790.58; provided that any teacher retiring under said section who has not paid the assessments for thirty years shall be credited with the yearly assessments actually paid, together with interest on each up to the time of retirement at the rate aforesaid, and shall be allowed the option of paying the balance of the $395.29 or $790.58 in one sum at the time of retirement or in five equal annual instalments of which such balance shall be the present worth at the time of retirement, allowing interest as aforesaid, these instalments to be deducted and retained by the secretary treasurer from the sums payable to such teacher under the provisions of this bylaw."

The following are the sections of the Ontario Public School Act respecting Superannuation. The provisions apply to teachers of high schools as well:

106. "Every teacher and inspector whose name was, on the 30th day of March, 1886, entered as having contributed to the fund for superannuated teachers, may continue to contribute to such fund, in such manner as may be prescribed by the Regulations, the sum of at least $4 annually, but no payment of arrears which accrued before the 1st day of January 1885, shall be allowed."

107. "On the death of such teacher or inspector, the wife, husband, or legal representative of such teacher or inspector, shall be entitled to receive the amount paid into the superannuation fund by such teacher or inspector, with interest at the rate of seven per cent. per annum."

108. (1) "Every teacher and inspector who, while engaged in his profession, has contributed to the superannuated teachers' fund as provided by this Act, shall, on reaching the age of sixty years, if he retires

from the profession, receive an annual allowance at the rate of $6 per annum for every year of service in Ontario, upon furnishing evidence of good moral character, age and length of service."

(2) "A teacher or inspector who has reached the age of sixty years shall not be disqualified for superannuation by reason of his having retired from active service before reaching that age if he has served for a period of thirty years."

(3) "Every teacher and inspector under sixty years of age who has so contributed and who is disabled from practising his profession shall be entitled to a like annual allowance upon furnishing evidence as to length of service, moral character, and disability."

(4) "Every superannuated teacher and inspector who holds a first or second class provincial certificate, or a first class county board certificate, and every principal of a high school or collegiate institute shall be entitled to receive a further allowance at the rate of $1 per annum for every year of service while he held such certificate or while he acted as principal of a high school or collegiate institute."

(5) "The retiring allowance shall cease at the close of the year in which the death of the recipient takes place."

(6) "If a superannuated teacher or inspector, with the consent of the Minister, resumes the profession of a teacher or inspector, his allowance shall be suspended during the time he is so engaged, and if he is again placed on the superannuation list an allowance for the additional time of service shall be made on compliance with this Act and the Regulations."

(7) "A teacher or inspector, who, having resumed his profession, or who draws or continues to draw upon the superannuation fund, shall forfeit all claim to the fund and his name shall be struck off the superannuation list."

(8) "A teacher or inspector who retires from the profession, or who desires to remove his name from the list of contributors to the superannuation fund, shall be entitled to receive back one-half of any sum contributed by him to the fund."

(9) "Where a teacher or inspector does not avail himself of the provisions of section 106 or of subsection 8 of this section, the provisions of section 107 and subsections 1 to 7 of this section shall apply so far as relates to all sums already paid by him into the superannuation fund."